

**SUBSTANCE USE: AN ADOLESCENT HEALTH CONCERN**

by

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Doctor of Nursing Practice

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## ABSTRACT

*Purpose:* This Doctor of Nursing Practice (DNP) project's purpose was to implement the Screening, Brief Intervention, Referral to Treatment (SBIRT) model with the Car, Relax, Alone, Forget, Family/Friends, Trouble (CRAFT) screening tool to increase the identification of adolescents at risk for substance use behaviors and provide resources on referrals to treatment during non-acute emergency department (ED) visits.

*Background and Review of Literature:* Substance abuse is the number one health concern in adolescents reported in the national representative household survey. Many adolescents are not screened for substance use in the ED, primary care, or school setting since valid and reliable screening tools to assess substance use in adolescents are not a standard component of clinical assessments by healthcare providers. Effective screening for risky behaviors in adolescence and referral protocols that promote early identification and enrollment with services is needed. Systematic literature review of risky behavior screening in adolescence in PubMed, Cochrane Database of Systematic Reviews, Google Scholar, and Ovid databases produced 1,158 peer-reviewed articles published since 2013. Of these, 12 met inclusion criteria of English language and SBIRT model with CRAFT screening tool. *Methods:* The SBIRT model with the CRAFT screening tool was implemented in the Wilmington ED during the Fall of 2019. Nursing staff performed screening and provided resources for referrals to treatment to all clinically stable adolescents between the ages of 14 to 21 years. *Results:* Over eight weeks, ED staff screened 54 adolescents for risk-taking behaviors, of which 25 had a CRAFT score greater than zero (46%). Of those screened, 54% received positive feedback, 22% received a brief intervention, and 24% received a referral to treatment based on the

CRAFFT score. *Conclusions:* Nursing staff in the Wilmington ED successfully deployed the SBIRT model with the CRAFFT screening questionnaire during an eight-week trial. Adolescents with a positive screen for risk-taking behaviors were able to receive the interventions and resources to referral for treatment provided. This demonstrated that implementation of the SBIRT model and the CRAFFT screening questionnaire identified at-risk adolescents and provided needed early intervention using the SBIRT model.

Keywords: “substance use”, “adolescents”, “screening”, “SBIRT model”, “CRAFFT screening tool”

## Chapter 1

### INTRODUCTION

The United States is currently dealing with an opioid epidemic. All physical diseases are predicted to be surpassed by mental and substance use disorders by the year 2020 (Crowley & Kirschner, 2015). Substance abuse is the number one health concern in adolescents reported in the national representative household survey (Levy, Williams, & Committee on substance use and prevention, 2016). A *Healthy People 2020* objective calls for reducing the teen substance use rate (Levy et al., 2016).

#### 1.1 Background

Healthcare providers frequently encounter adolescent patients who demonstrate risky behavior that can lead to substance use. It is essential to improve healthcare providers' ability to identify adolescents at risk for drug use. Adolescents face a multitude of issues that support the risk for substance use, including academic issues, poor mental health, peer pressure, poverty, family members using illegal drugs, and family divorce (D'Amico, Parast, Meredith, Ewing, Shadel, & Stein, 2016).

Unfortunately, many adolescents are not screened for substance use in the emergency department (ED), primary care, or school settings. Valid and reliable screening tools to assess substance use in adolescents are not a standard component of clinical assessments by healthcare providers (Newton, Soleimani, Kirkland, & Gokiert, 2017). A notable number of at-risk adolescents remain unidentified and do not receive necessary preventative or treatment services. The use of a screening tool in practice allows for the opportunity to identify and prevent the use and/or abuse of substances among this population (Newton et al., 2017). Healthcare providers are encouraged to screen and

evaluate adolescents for substance use (Newton et al., 2017). The Screening, Brief Intervention, and Referral to Treatment (SBIRT) model is an evidence-based approach for the delivery of interventions for adolescents demonstrating problematic substance use (Stanhope, Manuel, Jessell, & Halliday, 2018). The SBIRT model allows healthcare providers to screen many adolescents quickly, increases the identification of adolescents at risk for substance use who may otherwise go unnoticed, identifies adolescents prior to developing substance abuse or dependence, provides interventions that can be delivered rapidly, and provides these adolescents with access to treatment (Stanhope et al., 2018). The screening tool for the SBIRT model will be the Car, Relax, Alone, Forget, Friends, Trouble (CRAFFT) questionnaire. The CRAFFT questionnaire is recommended for clinical use as preventative care screenings by the American Academy of Pediatrics' Bright Future Guidelines (Agle, Gassman, Jun, Nowicke, & Samuel, 2015). The CRAFFT questionnaire provides a more vivid perspective of adolescent substance use and has been used for the identification substance use and dependence (Agle et al., 2015).

There are multiple validated substance use screening tools available for adults, but recent meta-analytic work identified only two self-administration screening tools that showed significant support for adolescent substance use; the Alcohol Use Disorders Identification Test (AUDIT) and the CRAFFT questionnaires (Agle et al., 2015). The AUDIT questionnaire only assesses adolescent alcohol use. The CRAFFT questionnaire addresses both alcohol and substance use and has a high correlation with substance-related diagnostic classifications (Agle et al., 2015). The research study by D'Amico and colleagues (2016) compared the performance of four screening tools for the

identification of adolescent substance use: the National Institute on Alcohol Abuse and Alcoholism Screening Guide, the AUDIT, the CRAFFT, and the Personal Experience Screening Questionnaire Problem Severity Scale. The CRAFFT had the highest sensitivity for alcohol outcomes and correctly identifies more at-risk adolescents for alcohol and marijuana use (D'Amico et al., 2016). This Doctor of Nursing Practice (DNP) practice change project will utilize the CRAFFT questionnaire exclusively (Appendix A).

In the United States, Delaware is the smallest population and second smallest land mass state. The three counties in Delaware are New Castle, Kent, and Sussex. The state population is estimated to be 952,065 people (Center for Drug and Health Studies [CDHS], 2017). Individuals aged 18 years and younger comprise 21.6% of Delaware's population (CDHS, 2017). Many of the southern and eastern neighborhoods in New Castle County, and all of Kent and Sussex Counties are considered medically underserved areas (CDHS, 2017). Delaware has a high prevalence of illegal drug use due to its location in the Mid-Atlantic Region and quick access to Maryland, Pennsylvania, and New Jersey. Delaware also has major highways, Interstate 95 and U.S. Highway 113, which allow for easy transport of drugs across the state and increased access to drugs for vulnerable populations like adolescents (National Drug Intelligence Center, 2002).

Marijuana, opioids, and heroin use are major issues seen in Delaware (DEA.gov, 2016). Use of these substances can interfere with brain development and can lead to chronic use of illegal substances in an adolescent. The purpose of the SBIRT model with use of the CRAFFT questionnaire is to identify substance use in the adolescent so that preventative measures or treatment for the adolescent at risk may be provided. The next

paragraphs expand upon the prevalence of each substance in Delaware and why prevention is important for the adolescent population.

### **1.1.1 Marijuana**

Recently, laws have changed around the use of marijuana and so have public perceptions of risk involved. Marijuana potency has increased over the past decade with a rise in the percentage of tetrahydrocannabinol (THC) (CDHS, 2017). Synthetic marijuana has also been introduced to the public and found to be more toxic and has more complications (CDHS, 2017). The perception of risk for marijuana is expected to decline and lead to increased use over time (Pew Research Center, 2017).

Adolescence is a time of critical brain development. The prefrontal cortex, the last area of the brain to develop, is associated with decision-making, impulse control, and risk-taking (CDHS, 2017). Comparisons between adolescents who use marijuana regularly and adolescents who abstain have noted differences in brain development associated with impulse control, memory, and IQ (CDHS, 2017). Early marijuana use has shown to increase risk of dependence on other substances later in life (CDHS, 2017).

In Delaware, marijuana use rates are higher than the national average in those aged 18 years and younger (CDHS, 2017). When surveyed among 5<sup>th</sup>, 8<sup>th</sup>, and 11<sup>th</sup> graders in Delaware, a majority reported marijuana not to be a great risk when smoked frequently (CDHS, 2017). Over 90% of 11<sup>th</sup> graders and 80% of 8<sup>th</sup> graders reported smoking marijuana frequently in Delaware (CDHS, 2017). Adolescents under the influence of marijuana while driving place themselves at greater risk for injury second to motor vehicle crashes. In Delaware, one third of the 11<sup>th</sup> graders surveyed reported being

in a car while someone was under the influence of marijuana and one in ten persons reported they had driven while under the influence (CDHS, 2017).

#### **1.1.1.1 Opioids**

Nationally, there is a public health epidemic associated with the devastating increase in the number of individuals abusing opioids (CDHS, 2017). Opioids are addictive and lead to overdose deaths, criminal behavior, and other tragic outcomes. Over 75 billion dollars have been spent annually for healthcare complications and rehabilitation related to opioid dependency and misuse (U.S. Department of Health and Human Services [HHS], n.d.). In 2015, nearly 122,000 United States adolescents reported having an addiction to prescription opioids while another 21,000 reported heroin use (American Society of Addiction Medicine, 2015). The leading cause of injury-related deaths for the United States in 2013 was drug overdose with 43,982 reported deaths (Hedegaard, Chen, & Warner, 2015). The Centers for Disease Control and Prevention (CDC) estimates nationally that, for every one overdose death in an adolescent, there were roughly 119 visits to the ED and 22 admissions for drug treatment (HHS, 2017). Additional health complications, in addition to overdose, arise from opioid misuse including the spread of infectious diseases by those who inject substances.

In 2014, Delaware was ranked 8<sup>th</sup> highest in heroin fatalities in the United States, and the drug overdose rate has increased dramatically over recent years (CDHS, 2017). According to the Prescription Behavior Surveillance System (2016), over 70% of overdose deaths in the year 2014 were due to opioids, 42% related to prescribed opioids, and 29% related to illicit drugs. Individuals aged 18 to 25 years, ranked higher than national average on the nonmedical use of prescription opioids in Delaware (CDHS,

2017). In Delaware, 11% of individuals over the age of 12 years reported use of an illicit drug within the past year (CDHS, 2017). About 12% of 11<sup>th</sup> graders in Delaware reported the misuse of prescription drugs within the last year with Codeine being the most misused drug (CDHS, 2017). Out of these 11<sup>th</sup> graders, 23% reported the misuse was due to pain and 13% reported the misuse to get high or for fun (CDHS, 2017).

## **1.2 Significance**

Delaware has school-based health centers (SBHCs) located within the public high schools in partnership with ChristianaCare, the school district, and the Delaware Division of Public Health. The SBHCs provide high-quality healthcare to adolescents at public high schools and assist the adolescent to overcome the obstacles to receiving quality healthcare (ChristianaCare, n.d.). In addition to physical exams, health screenings, women's healthcare, treatment for minor illnesses, immunizations, nutrition and weight management, crisis intervention, and doctor referrals, the SBHCs screen all at-risk youth using the CRAFFT questionnaire. Students with a positive CRAFFT questionnaire receive the necessary counseling and treatment (ChristianaCare, n.d.). However, not all students are registered with the SBHCs. Per the Christiana High School Nurse, the school has nearly 1,300 students and only about 200 to 300 students are registered with the SBHCs (A. Boyce, personal communication, September 25, 2018). Many of these at-risk students do not have the proper screening for substance use and do not receive the resources or treatment they need. The protocol for registering for the SBHCs requires parental consent for those under the age of 18 years. The parent or adolescent 18 years and older will fill out the student registration form and health history form. The adolescent needs up-to-date insurance information if the adolescent is insured. There is

no co-pay, co-insurance, or deductible that will be charged to the parent/caregiver and no adolescent will be turned away based on the inability to pay (ChristianaCare, n.d).

The CRAFFT questionnaire is also used in the Adolescent Medicine at Nemours and at the Adolescent Resource Center (ARC) (A. McVey, personal communication, June 26, 2019). The ARC sees patients between the ages of 12 to 20 years. Use of the CRAFFT questionnaire at the ARC has shown an increase in the number of adolescents in this age range using marijuana and alcohol (P. Mindler, personal communication, June 26, 2019). Most of these adolescents do not view frequent marijuana use to be an issue and often use marijuana to relax and ease their anxiety (P. Mindler, personal communication, June 26, 2019). Brief interventions and referrals to treatment used at the ARC include discussion on healthier coping skills and providing more focused and ongoing care such as the SBHCs, Nemours Psychology Department, Brandywine Counseling, Connections, and Delaware Guidance (P. Mindler, personal communication, June 26, 2019).

In Delaware, ChristianaCare partners with five medical aid units (MAU), 14 primary care offices, and three EDs. When speaking with a doctor of a local primary care office who partners with ChristianaCare, the only screening that is performed is asking all individuals if they use tobacco products, drink alcohol, or use any illegal substances (P. Yerkes, personal communication, June 20, 2018). These primary care offices provide care to many adolescents and use of a valid screening tool would be beneficial for the identification of at-risk teens for substance use and/or abuse (P. Yerkes, personal communication, June 20, 2018). The MAUs that partner with ChristianaCare and the EDs

at ChristianaCare also ask the same screening questions regarding smoking, drinking alcohol, and substance use (A. Hardy, personal communication, August 2, 2018).

The three ChristianaCare EDs include Christiana, Wilmington, and Middletown locations. All three EDs perform the same screening that was described previously at the primary care offices and many adolescents are treated daily for various ailments in these EDs. Adolescents seen in the ED setting have a higher rate of substance use than other adolescents and would benefit from early identification of risky behavior (Hawk & D’Onofrio, 2018). Use of SBIRT in the ED setting has reduced healthcare costs and inpatient utilization and increased admissions to substance use disorder treatment (Pringle et al., 2018). The implementation of the SBIRT model with the CRAFFT questionnaire can assist with the identification of adolescents using substances and providing them with the needed resources and referrals to treatment in the ED setting.

Delaware has formed the Behavioral Health Consortium (BHC) that focuses on identifying at-risk teens and providing these teens with the resources and treatment they need related to substance use. One of the primary concerns for the consortium is the lack of identification and referral to treatment for these at-risk teens. Implementing the use of screening via the CRAFFT questionnaire, providing a brief intervention for those with positive screens, and giving them the necessary referral to treatment addresses BHC concerns and is the focus of this practice change project.

### **1.3 PICOTS Question**

As described by Melnyk and Fineout-Overholt (2019), the PICOT question format is a means to formulate the clinical question that can be answerable and researchable. (\*PICOTS = patient population, intervention, comparison intervention,

outcome, time, and setting). Therefore, the question driving this project is: (P) In the adolescent population, between the ages of 14 to 21 years, (I) will implementation of the SBIRT model with the CRAFFT tool for screening (O) increase the identification of those using substances over (T) eight weeks in the (S) Wilmington Emergency Department?

### **1.3.3 Purpose and Rationale**

The population of interest is adolescents between the ages of 14 to 21 years. Vulnerability to addiction differs among individuals. Adolescence is thought to be a developmental period for the emergence and escalation of risk-taking behavior (Ammerman, Steinberg, & McCloskey, 2018). The prevalence of drug and alcohol use increases during adolescence and heightens in young adulthood (Substance Abuse and Mental Health Services Administration [SAMHSA], 2018). Preventing drug abuse before it even starts is one way to mitigate the psychological, economic, social, and health consequences of substance abuse (SAMHSA, 2018). Prevention primarily among adolescents who have never used or just recently started to use drugs can assist healthcare providers and policy makers in changing this epidemic. All adolescents should be screened for risky behavior of alcohol and drug use to reduce the number of preventable deaths and tragic complications each year (Chakravarthy, Shah, & Lotfipour, 2013).

The ED is recognized as providing critical access to healthcare for many individuals and provides an opportunity to identify and link adolescents to care for substance use (Hawk & D'Onofrio, 2018). Healthcare providers are often viewed by adolescents as an authoritative source of knowledge on substance use and are receptive to discussing substance use (Levy et al., 2016). The findings on how adolescents view

healthcare providers present a tremendous opportunity to address substance use in healthcare settings.

To assist healthcare providers in identifying adolescents at risk for substance use, the screening procedure should be routine practice. Only about 30% of healthcare providers perform any type of substance abuse screening and nearly 69% do not offer substance abuse counseling (Chakavarthy et al., 2013). Few healthcare providers reported using a validated screening tool to identify adolescent substance use (Levy et al., 2016). The use of a structured substance abuse screening tool results in higher detection rates of substance use among adolescents when compared to standard clinical practice (Mitchell, Gryczynski, O'Grady, K. E., & Schwartz, 2013). Lack of time, lack of familiarity with validated screening tools, and insufficient training are some of the many common barriers to screening adolescents for substance use risk.

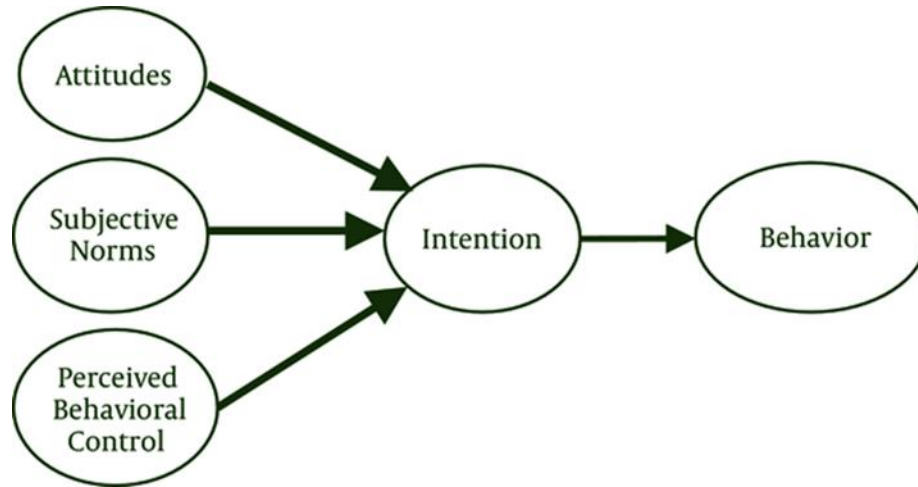
Healthcare providers can use the SBIRT model, as recommended by the Institute of Medicine for community-based screening for health-risk behaviors (SAMHSA, n.d.) (Appendix B). The first step to SBIRT is screening. A screening instrument commonly used during this first step is the CRAFFT questionnaire (Stanhope et al., 2018). Self-administered entry of the CRAFFT questionnaire has shown to be a valid and time-efficient alternative to clinician-administered screening (Harris, Knight et al., 2016). A CRAFFT score of zero places the adolescent at low risk for substance use and warrants positive reinforcement and monitoring. A CRAFFT score of one places the adolescent at moderate risk for substance use and creates the second step of the SBIRT, brief intervention. Brief intervention can be a short conversation between the nurse or healthcare provider and the adolescent to provide feedback and advice or motivational

interviewing (SAMHSA, n.d.). A score of two or higher on the CRAFFT tool requires the third step of SBIRT, referral to treatment. The nurse or healthcare provider shares information on the available resources within the community and /or a referral to therapy or substance use treatment to the adolescent in need of additional services (SAMHSA, n.d.). Permission to utilize the CRAFFT screening tool granted on October 6, 2018 by the Center for Adolescent Substance Abuse Research (Appendix C).

#### **1.4 Theoretical Framework**

The Theory of Planned Behavior (TPB) guided this DNP project and supported evaluation of the practice change outcomes. In 1980, the TPB was devised by researchers Ajzen and Fishbein to predict an individual's intention to engage in a behavior during a specific time and place (Boston University School of Public Health, 2016). The TPB has successfully predicted and explained many health behaviors and intentions among adolescents and adults including smoking, drinking, substance use, and others (Boston University School of Public Health, 2016). An individual's determinate of intent to engage in a behavior is attitude, subjective norm, and perceived control that are measured in the TPB and the CRAFFT questionnaire (Figure 1.1). Attitudes include the adolescent's positive or negative evaluation of using substances (Cooke, Dahdah, Norman, & French, 2016). Subjective norms reflect on the adolescent's perceptions of social approval or disapproval of engaging in substance use (Cooke et al., 2016). Perceived control is the representation of the adolescent's perception of control over using substances (Cooke et al., 2016).

Figure 1.1: Theory of Planned Behavior



The TPB can predict an individual's decision to engage in drug use by examining his or her attitude toward behavior, subjective norms, and perceived control over the behavior. The intention to engage in tobacco, alcohol, or drug use is based on the adolescent's attitude. Culture and environment are subjective norms that influence the likelihood an adolescent will behave in a particular way (Kolodny et al., 2015). Adolescents are more likely to use substances if their parents or other family members are drug abusers, or if their peers have used drugs (Kolodny et al., 2015). In the TPB, if an individual has a positive attitude towards drug abuse and the social norm among the community and family members is positive, then they are more likely to engage in the behavior (Kolodny et al., 2015). Additional contributors to adolescent drug use include peer pressure and perceived control (Alhyas et al., 2015). When the adolescent feels a high sense of perceived control, their impact of intention on the behavior is stronger (Zemore & Aizen, 2014).

The TPB exemplifies a strong relationship with risky behavior and drug use through beliefs, attitudes, and intentions that drive the behavior. The CRAFFT

questionnaire captures many of the aspects of the TPB by screening adolescents, who have or are at risk for a substance use disorder or demonstrate maladaptive behaviors.

## **Chapter 2**

### **REVIEW OF THE LITERATURE**

The evidence-based PICOTS question guided the literature search for this Doctor of Nursing Practice (DNP) practice change project. For the identification of appropriate evidence-based clinical practice guidelines for the Screening, Brief Intervention, and Referral to Treatment (SBIRT) model and the Car, Relax, Alone, Forget, Friends, Trouble (CRAFFT) use for adolescents, an extensive review of available current literature was performed.

#### **2.1 Search Process**

A systematic literature search was performed between June 2017 to June 2019 for the purpose of locating published evidence in selected databases that were syntax appropriate for each search tool (PubMed, Cochrane Database of Systematic Reviews, Google Scholar, and Ovid). The search strategy foci included: (a) effects of substance use in adolescents, (b) validated screening tools for substance use in adolescents, (c) healthcare provider and patient barriers and facilitators affecting the implementation of substance use screening, (d) adolescents' perception of substance use and what factors influence drug use, (e) validity of computer self-administered versus clinician-administered screening, (f) CRAFFT questionnaire, and (g) SBIRT model. After reviewing the validated screening tools for substance use in adolescents, CRAFFT was the only questionnaire that assesses both alcohol and other substances (D'Amico et al., 2016). CRAFFT also has the highest sensitivity for alcohol outcomes and correctly identifies more at-risk adolescents for alcohol and marijuana use (D'Amico et al., 2016).

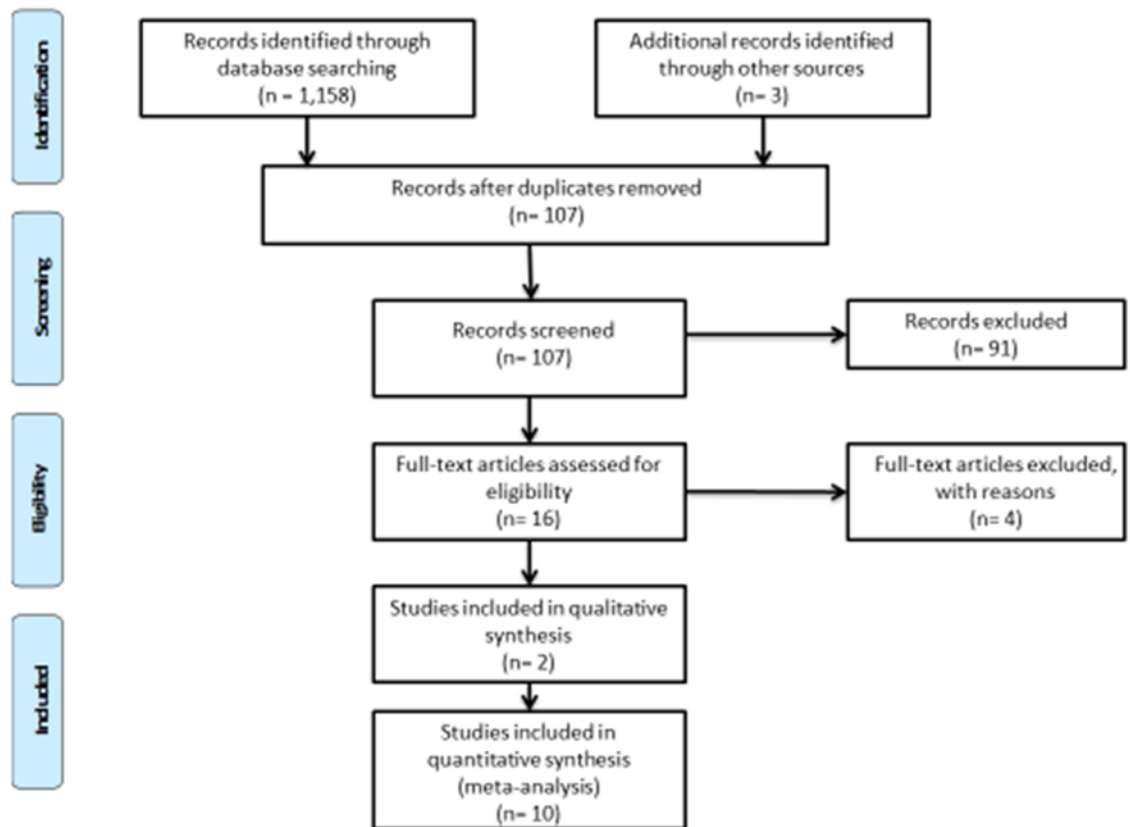
Key search words included, 'substance use', 'adolescents', 'screening', 'SBIRT model', and 'CRAFFT questionnaire'. The three Boolean operators used in various combination for searches include AND, OR, and NOT.

Reference lists of the retrieved articles were reviewed to enhance the likelihood of identifying relevant studies. The search was limited to peer-reviewed articles written in English, published within the last five years, full text, and human studies. A Boolean combination of key words 'substance use', 'adolescents', 'screening', 'SBIRT model', and 'CRAFFT questionnaire' in PubMed, Cochrane, Google Scholar, and Ovid databases produced a total of 1,158 articles.

The results of the search were appraised for relevance to the PICOT. The search (a) regarding the effects of substance use in adolescents yielded 585 citations, of which 22 articles were relevant. The search (b) validated screening tools for substance use in adolescents yielded eight citations, of which five were relevant. The search (c) healthcare provider and patient barriers and facilitators affecting the implementation of substance use screening yielded 89 results, of which 28 were relevant. The search (d) adolescents' perception of substance use and what factors influence drug use yielded 46 citations, of which ten were relevant. The search (e) validity of computer self-administered versus clinician-administered screening yielded seven citations, of which four were relevant. The search (f) CRAFFT questionnaire yielded 83 citations, of which 14 were relevant. The search (g) SBIRT model yielded 175 citations, of which 24 were relevant. Twelve articles were selected from the literature search and reviewed. A PRISMA diagram displays the breakdown of article selection (Figure 2.1). Articles were determined relevant if there was discussion on the CRAFFT questionnaire, SBIRT model, provided

useful information about adolescent behaviors, barriers seen with implementing this screening process, adolescent awareness to substance use and their health effects, and the importance of the healthcare system effectively addressing behavioral health conditions.

Figure 2.1: PRISMA Diagram



Of the relevant articles found, 12 met the inclusion criteria of English language and peer-reviewed published within the last five years and are noted in the review of literature table (Appendix D). The selected articles included: two systematic reviews, two data analyses, two qualitative studies, two literature reviews, one integrative review, two randomized control trials, and one mixed methods study. All the research articles were appraised and synthesized using the Johns Hopkins Nursing Evidence-Based Practice Rating Scale for evidence level and quality guide (Appendix E). The two tools used

included the Evidence Level and Guide and the Research Evidence Appraisal Tool. The leveling ranges from I to V based on the type of study completed. The quality rating ranges from high or good quality depending on consistency of results, sample sizes, adequate control, conclusions, and recommendations. Nine of the articles were rated as high quality for the consistency of results with sample size, reproducible search strategies, and well-defined methods section. Three of the articles were rated as good quality for their sufficient sample size, evaluation of strengths and limitations of studies, and expertise appears to be credible.

## **2.2 Review and Synthesis**

The study produced by Mitchell et al., (2013), gave statistics on the prevalence of adolescent substance use rates occurring within the United States. Between the ages of 12 to 17 years of age in the United States, ten percent of youth reported using substances within the past month (Mitchell et al., 2013). Nearly 48% of adolescents graduating high school have used illicit substances (Mitchell et al., 2013). This high rate of adolescent use of substances is concerning since adolescence coincides with developmental periods during one's lifespan. Adverse health outcomes including death from drug intoxication, motor vehicle accidents, HIV and hepatitis infections, violence, criminal behavior, as well as issues at home and school that stem from substance use were equally alarming (Mitchell et al., 2013). Substance use disorders later in adulthood were also increased when substance use started in adolescence (Mitchell et al., 2013).

Many adolescents who use substances do not seek and are not enrolled in treatment (Mitchell et al., 2013). Nearly 1.8 million adolescents need substance use treatment in the United States, but only about 150,000 received any form of intervention

and/or treatment for substance use (Mitchell et al., 2013). Unaddressed adolescent substance use is a major issue in the United States that leads to underutilization of substance use services (Stanhope et al., 2018). Health systems need to implement screening for substance use in adolescents to connect them to appropriate services for treatment. Therefore, effective screening and identification of adolescents with risk-taking behaviors indicative of substance use before experiencing an adverse consequence or advancement of substance dependence is needed (Mitchell et al., 2013). The literature recognizes the importance of the healthcare system effectively addressing substance use health conditions within the adolescent population (Crowley et al., 2015). Crowley and colleagues (2015) provide an environmental scan of the current state of behavioral health and examined the arguments for and barriers to increased integration of preventative screening into the healthcare system.

The literature reviewed recommended use of the SBIRT model with use of the CRAFFT questionnaire in practice for the identification of at-risk adolescents and substance use (Agle et al., 2015; D'Amico et al., 2016; Levy et al., 2014; & Newton et al., 2017). The CRAFFT questionnaire assesses adolescent frequency of substances used within the last year and is a valid method for the identification of adolescent substance use (Levy et al., 2014). The SBIRT model is endorsed by the American Academy of Pediatrics as an evidence-based strategy to identify, address, and treat risky behaviors demonstrated in adolescents (Harris, Shaw, Sherman, & Lawson, 2016). It was reported in one study that only 22% of healthcare providers implemented the SBIRT model into practice, 30% of healthcare providers believed the SBIRT model would be effective in reducing substance use in adolescents, 63% of participants did not feel using screening

tools for substance use was part of their provider role, and nearly 30% expressed concern regarding confidence in the intervention or management of substance use (Harris et al., 2016). The evidence suggested addressing barriers to implementation of the SBIRT model (McNeeley et al., 2018). Some barriers expressed by healthcare providers included time constraints, self-efficacy, perceived role responsibility, and lack of training (McNeely et al., 2018). Barriers can be overcome by providing training on how to implement SBIRT with the CRAFFT questionnaire and addressing concerns regarding time and workflow.

Time constraints was the biggest barrier found when implementing screening into practice (McNeeley et al., 2018). The advantages of the SBIRT model is the capability of screening many individuals quickly, identifying adolescents at risk for substance use who would otherwise go unnoticed, identifying adolescents prior to developing substance abuse and dependence, providing interventions that can be delivered quickly, and access to treatment (Mitchell et al., 2013). Evidence showed that the CRAFFT questionnaire took less than five minutes to complete and had the same sensitivity and specificity for the detection of substance use when self-administered or administered by a healthcare provider (D'Amico et al., 2016; Harris et al., 2016; & Newton et al., 2017). However, self-administration of the CRAFFT questionnaire had a faster mean completion time (Harris et al., 2016). Self-administration of the CRAFFT questionnaire can assist busy healthcare providers increase adolescent screening rates for substance use effectively and efficiently (D'Amico et al., 2016; & Harris et al., 2016). Thus, using the CRAFFT questionnaire for substance use in adolescent patients adds minimal time to the healthcare encounter.

Due to the identified barriers, many adolescents are not screened by a healthcare provider for substance use and remain undetected and untreated, leading to increased health risks and substance dependence (Stanhope et al., 2018). In a recent study 136 participants, between the ages of 12 to 17 years, seen in the primary care setting during a well visit, the CRAFFT questionnaire detected 27% of adolescents reported substance use within the last year and seven percent met criteria for an alcohol or marijuana use disorder (Harris et al., 2016). The use of the CRAFFT questionnaire coupled with informational feedback and referrals to treatment significantly reduced adolescents' substance use at the three months to one-year follow-up (Harris et al., 2016). Harris and colleagues (2016) study showed the importance of screening adolescents.

Adolescence is a critical and transformative period in a person's lifespan. Research supports that risk-taking behavior is strongest during adolescence (Ammerman et al., 2016). Adolescent substance use is a public health concern (Alhyas et al., 2015). Factors that increase substance use at an early age include curiosity, peer pressure, lack of parental supervision, family member use of substances, and behavioral issues (Alhyas et al., 2015). A healthcare provider identifying risk from the viewpoints of adolescents is helpful in prevention strategies of substance use. Alhyas and colleagues (2015) identified factors that mitigate adolescent risk-taking behaviors and correlated these behaviors to the number of adverse childhood experiences and future substance use behaviors. Risk factors at the individual and community level increase the incidence of substance use during adolescence (Alhyas et al., 2015). Adolescence is a time when risk-taking behavior is known to increase; therefore, there are implications for prevention and intervention programs for adolescents (Ammerman et al., 2016).

The CRAFFT questionnaire has been found to provide the best perspective of adolescent substance use (Agle et al., 2015). Multiple studies also support that the CRAFFT questionnaire is most effective for the identification of substance use in the adolescent population and can be used within the primary care, school, or acute care setting (Agle et al., 2015; D'Amico et al., 2016; Harris et al., 2016; Levy et al., 2014; & Newton et al., 2017). The CRAFFT questionnaire has a sensitivity of 0.97 and identifies more at-risk adolescents than any other screening tool for alcohol and marijuana use (D'Amico et al., 2016; & Harris et al., 2016). Implementation of a standardized protocol, using an effective and sensitive tool, can increase the identification of adolescents for substance use and allows for more brief interventions and referral to treatment for at-risk adolescents.

D'Amico et al., (2016) stressed the importance of healthcare providers improving their capability in identifying adolescents at risk for alcohol and substance use. The goal of this DNP project is to establish a screening, brief intervention, and referral to treatment framework for adolescents at risk for substance use. The goal is reaffirmed by the evidence-based findings.

### **2.3 Project Recommendation**

Adolescents, ages 14 to 21 years, were selected for this DNP project change since these are the years when social norms and peer pressure positively influence risky behavior (Alhyas et al, 2015). Screening and interventions in the early stages of substance use is essential in decreasing further use of substances. Despite concerted efforts to make the integration of substance use screening and interventions as part of mainstream medical care, adolescents are rarely screened, assessed, or treated for

substance use (McNeely et al., 2018). Substance abuse screening in the adolescent population and intervening immediately can decrease the burden of addiction and morbidity related to substance use (Levy et al., 2014). Primary care centers, emergency departments (EDs), schools, and other community health settings provide the opportunity to intervene early for at-risk adolescent substance users. The SBIRT model with the use of the CRAFFT questionnaire for those aged 14 to 21 years of age can be utilized in any setting that targets an adolescent population (Stanhope et al., 2018).

Screening for substance use should become a higher priority in healthcare settings. Given the populations served and the resources available within the ED setting, the SBIRT model with the CRAFFT questionnaire could be well poised to provide screening, intervention, and referral for treatment of adolescents. Synthesis of the literature reviewed on substance use screening in the adolescent population highlights critical findings and issues relevant for healthcare providers. The literature review demonstrates that substance use in the adolescent population has the potential to impact the developmental, mental, and physical well-being of this vulnerable population if early intervention is not initiated. Evidence supports the implementation of the SBIRT model with the CRAFFT questionnaire for screening of adolescent substance use in the ED. Routine screening with associated interventions and resources for treatment contribute to positive outcomes for these at-risk adolescents (Stanhope et al., 2018). Additionally, emergency nurses are recommended for this project implementation as they are educated and experienced on how to effectively screen individuals for substance use disorders seeking treatment (Emergency Nurses Association, 2016).

## **Chapter 3**

### **METHODOLOGY**

The methodology chapter reviews the setting, participants, implementation plan, timeline, ethical considerations, data collection and analysis, project budget, and close-out and dissemination.

#### **3.1 Setting**

This Doctor of Nursing Practice (DNP) project change addressed a gap in screening for risky behaviors that increase the likelihood of substance use in adolescent patients. Wilmington Hospital, linked with ChristianaCare, is a private, non-profit healthcare system that provides services to all age groups from areas including Delaware, Pennsylvania, Maryland, and New Jersey (ChristianaCare, 2019). In 2018, the Wilmington Emergency Department (ED) served 63,129 individuals and is the 21<sup>st</sup> highest in the United States for volume rankings (ChristianaCare, 2019). The Wilmington ED on average sees 200 patients per day (ChristianaCare, 2019). The population served ranges from newborns, children, adolescents, young adults, middle aged, and the elderly. Healthcare professionals who work in the Wilmington ED are among the most experienced emergency medical professionals in the region (ChristianaCare, 2019). This DNP project was presented to the administrative team of Wilmington Hospital's ED and was favorably received and perceived to improve patient health outcomes within the ED. Thus, the following implementation plan was developed.

The ED setting is an optimal setting for the identification and intervention of adolescents at risk for substance use (National Institute on Alcohol Abuse and

Alcoholism, n. d.). The ED provides critical access to the healthcare system for many individuals and has been found to be an opportunity to identify and give resources to adolescents seeking care for substance use (Hawk & D’Onofrio, 2018). Patients with substance use disorders regularly access the ED. A visit to the ED for any acute change in health provides an opportunity for healthcare staff to actively engage the individual in discussion and reflection which could assist in the motivation for a behavioral change which aligns with the Theory of Planned Behavior (Hawk & D’Onofrio, 2018). The ED provides many opportunities to improve patient care by screening, initiating treatment, and linking patients to resources for ongoing substance use treatment.

During the eight-week period of project implementation, use of Screening, Brief Intervention, and Referral to Treatment (SBIRT) model with the Car, Relax, Alone, Forget, Friends, Trouble (CRAFT) questionnaire were temporary standard of care in the Wilmington ED. All clinically stable adolescents with an emergency severity index (ESI) level of three, four, or five between the ages of 14 to 21 years were screened for risk behavior of substance use. As this was the standard of care, an informed consent was not required. All adolescents seen within the Wilmington ED that met inclusion criteria received the same treatment during this project implementation period.

### **3.2 Participants**

The evidence-based practice change initiative of implementation of the SBIRT model with the CRAFT questionnaire to identify, reduce, and prevent substance use, abuse, and dependence for all clinically stable adolescent ED patients, as the standard of care. The CRAFT questionnaire examined key components of the Theory of Planned Behavior (TPB) through the adolescent’s attitude on substance use, behavioral intentions,

subjective norms, and perceived behavioral control. Inclusion criteria comprised adolescent patients, male and female, between the ages 14 to 21 years seen in the ED as an ESI three, four, or five, and able to read and write using the English language. The ESI is an algorithm that allows for the triaging of patients into five groups from one, who is the most urgent, to five, who are least urgent, based on needed resources (Agency for Healthcare Research and Quality [AHRQ], 2018). A patient who is expected to consume no resources are classified as an ESI level five, individuals that will require one resource are classified as an ESI level four, and individuals needing two or more resources are classified as an ESI level three (AHRQ, 2018). Patient acuity level was determined by the ESI level within ChristianaCare and was completed on all patients seen within the ED. Participants were fluent in the English language. A standard clinical assessment performed in the Wilmington ED is the identification of the patient's preferred primary language. Exclusion criteria included adolescents under the age of 14 years and over the age of 21 years and/or medically unstable as assessed by an ESI of one or two who presented to the ED where additional routine screening could interfere with the delivery of care. The CRAFFT questionnaire and resources for referrals to treatment were only available in English; therefore, the SBIRT model implementation with CRAFFT questionnaire was limited to English speaking adolescents.

### **3.3 Implementation Plan**

The SBIRT model and CRAFFT questionnaire were integrated as the standard of care for clinically stable adolescents who presented to the ED within the Wilmington Hospital. The CRAFFT questionnaire is written at a seventh-grade reading level. The approximate age of seventh grade students in Delaware is 12 to 13 years of age.

The purpose of this evidence-based project was to implement the SBIRT algorithm, a structured risky behavior screening and referral to treatment/resources protocol, for all adolescent patients with an ESI level of three, four, or five seen in the Wilmington ED. The project aims of this DNP practice change project included a) to successfully implement the SBIRT model with the CRAFFT questionnaire to increase the identification of adolescents at risk for substance use in the Wilmington ED setting over an eight week period, b) to identify adolescents at risk for substance use utilizing the CRAFFT questionnaire in the Wilmington ED, as measured by universally screening over the eight week period, and c) to evaluate basic demographics, frequency of CRAFFT questionnaire administration, and correlation of health provider provision of intervention for adolescents at risk for substance use during the eight week period, as measured by the results of patient CRAFFT questionnaire.

### **3.3.3 Screening Tool**

The SBIRT model with the CRAFFT questionnaire were the central foci of this DNP practice change project. Screening rates among adolescents for risky behaviors remain low among healthcare provider intervention training (Harris et al., 2017). The CRAFFT questionnaire is recommended for use in the clinical setting by the American Academy of Pediatrics' Bright Futures Guidelines as preventative care screenings and well-visits (Boston Children's Hospital, 2018). Research has shown that screening for adolescent substance use adds minimal time burden to the healthcare encounter (Harris et al., 2016). The CRAFFT questionnaire offers high specificity, sensitivity, and acceptability of screening for adolescent substance use (D'Amico et al., 2016; & Harris et al., 2016). A CRAFFT score of zero requires no intervention but is recommended to

provide positive feedback to the adolescent. A CRAFFT score of one indicates the need for brief interventions by a healthcare provider. This includes either motivational interviews and/or a brief conversation about the risky behavior identified. A CRAFFT score between two and six indicates the adolescent is at high risk for substance use and alerts the healthcare provider to start the conversation on referrals to treatment options. Implementation of a standardized screening protocol improves referrals to services (House et al., 2018). Resources are readily available for adolescents that require substance use treatment in outpatient and inpatient settings. Outpatient treatment options include behavioral therapies, pharmacotherapies, or attendance in fellowships like Alcoholics Anonymous. Inpatient treatment may include detoxification, rehabilitation, or long-term residential treatment.

The Wilmington ED nursing staff were provided with printed handouts of the SBIRT model and CRAFFT questionnaire. They also received education on the adolescent's eligibility during the scheduled staff education and discussed within the project timeline. Nursing staff were instructed to allow eligible adolescent patients to self-administer the CRAFFT questionnaire.

The nursing staff were educated on using the CRAFFT questionnaire. The nursing staff learned about the questions the CRAFFT questionnaire asks, how to score the CRAFFT, and based on the CRAFFT score what SBIRT model intervention was indicated. Nursing staff were provided with printed sample discussions by the project leader during the education session of the SBIRT model with the CRAFFT questionnaire to use as a guide for brief interventions with adolescents during the implementation of DNP project phase. Brief intervention is a patient-centered strategy focused on changing

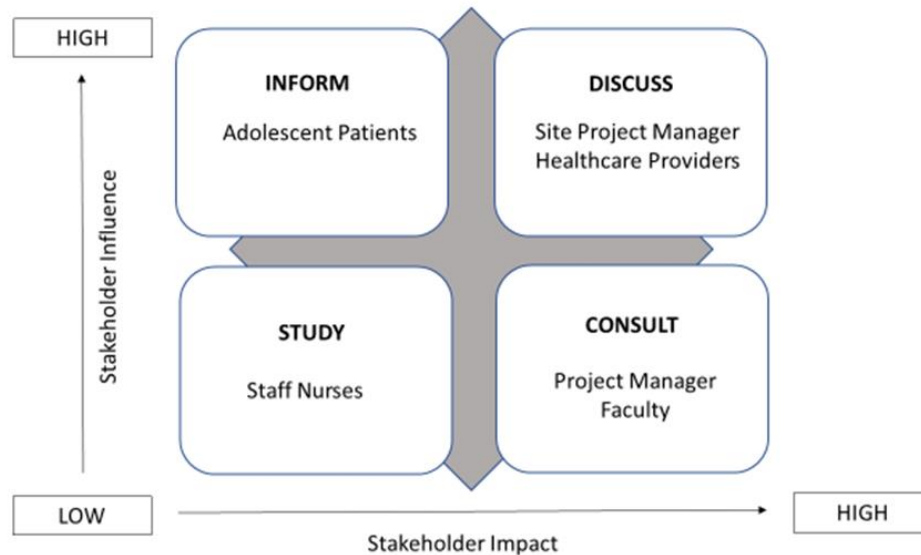
the adolescent's behavior by increasing awareness regarding substance use. The brief discussion provided a personalized feedback to the adolescent and showed concern for their use of substances. All nursing staff were educated on brief discussions. A handout was provided to the nursing staff on sample discussions to conduct with the adolescent patient during brief interventions (Appendix F). Resources on referral to treatment were readily available for the nursing staff to give each eligible adolescent screened (Appendix G). Brief interventions and resources for referral to treatment were explained and practiced during the education session.

### **3.4 Project Timeline**

Three study phases are presented below, and detailed project implementation timeline is discussed for this DNP practice change. University of Delaware and ChristianaCare Institutional Review Board (IRB) applications were approved prior to project implementation (Appendix H and I).

Phase one was the pre-launch plan which included the administration introduction and staff education. The DNP student, who is the project leader, led the administrative project introduction. Stakeholders that were included in this meeting were the site mentor who is the Wilmington ChristianaCare ED nurse manager, the chair of the Department of Emergency Medicine, the Director of Project Engage, and Wilmington ED staff nurses. Project Engage consultants collaborate with Wilmington ED healthcare staff to assist with patients 18 years and older who struggle with a substance use disorder.

Figure 3.1: Stakeholder Analysis



A SWOT analysis was undertaken for the identification of strengths, weaknesses, opportunities, and potential threats of the proposed plan. Identification of strategies were discussed with these stakeholders to overcome obstacles to the proposed plan. To assess the number of adolescents who met inclusion criteria for this DNP practice change project prior to implementation of this project, the project leader reviewed the number of eligible patients who were seen within Wilmington’s ED for the timeframe of September to December 2018 which is one year before implementation of current study timeframe. This information was obtained from the project manager of emergency services at ChristianaCare. The 2018 sample includes a total  $n = 903$  adolescents between the ages of 14 to 21 years with an ESI of three, four, or five.

Figure 3.2: SWOT Analysis



Staff nurses, Project Engage consultants, and healthcare providers within the ED received education on the DNP practice change project during mandatory required education sessions completed quarterly in September 2019. Education and discussions involved concepts surrounding substance use among adolescents and included the recommendation by the American Academy of Pediatrics’ Bright Futures Guidelines that all adolescents receive preventive screening using the CRAFFT questionnaire (Boston Children’s Hospital, 2018). Scoring of CRAFFT questionnaire results were reviewed in detail, brief interventions and the referral to treatment brochure was explained, discussed and practice script provided. A diagram, created by the project leader, assisted staff nurses to understand their role in this practice change (Appendix J). This was developed so there would be no confusion during project implementation on the intervention that would be completed by the nursing staff. This diagram can assist with sustainability by being part of the standard protocol and employment orientation to ED nursing staff.

The staff nursing education was completed during mandatory required education sessions, completed quarterly, by all staff nurses in September 2019. The presentation was less than thirty minutes in length and allowed the staff to ask questions after the presentation. Project Engage consultants were encouraged to attend the education sessions as well. Education for the healthcare providers was completed over the course of two weeks, two times a day during their scheduled shift to sign off attending Doctors for Emergency Services (DFES) on resources for referrals to treatment options for a score of six on the CRAFFT questionnaire. Return demonstration was a component of training to ensure all staff members understood how to introduce the screening questions to the parent(s)/guardian(s)/family member(s)/adolescent, score the CRAFFT questionnaire, give an example of a brief intervention, and provide resources to the referral to treatment handout.

Phase two was the launch of the SBIRT model with the CRAFFT questionnaire. The SBIRT model and CRAFFT questionnaire were readily available and became a routine screening component for clinically stable adolescents seen for care in the Wilmington ED during the implementation of this DNP practice change project. The role of the staff nurse in the introduction of the screening questions to the parent(s)/guardian(s)/family member(s)/adolescent was presented utilizing the script, “We screen all adolescents between the ages of 14 to 21 years for risky behavior as this is an important aspect in managing health and preventing substance use”. The staff nurse would hand the adolescent the CRAFFT questionnaire and at the same time the staff nurse handed the parent(s)/guardians(s)/family member(s)/adolescent the resources on referrals to treatment in Delaware handout. The parent(s)/guardian(s)/family member(s)

were asked to step out of the room for a moment while the screening took place and were called back in after the adolescent had time to complete the CRAFFT questionnaire. If the parent(s)/guardian(s)/family member(s) refused to leave the room during the CRAFFT screening administration, the nurse did not continue with the screening process but still offered the resources on referrals to treatment handout.

The DNP project leader and the faculty mentor both agreed that it was essential to provide all adolescents, who met inclusion criteria, with the resources for referrals to treatment in Delaware handout for three reasons: 1) to reduce suspicion to the parent(s)/guardian(s)/family member(s) of what the adolescent scored on the CRAFFT questionnaire, 2) the adolescent may not answer all the questions on the CRAFFT questionnaire honestly, and 3) adolescents' risk-taking behavior may increase in the future. Providing the resources on referrals to treatment in Delaware to all adolescents screened, allowed for everyone screened to receive information regarding the type and location of services available within the state. The purpose of this DNP practice change project, in addition to identification, was to provide the necessary information and the resources for the referrals to treatment to adolescents and the parent(s)/guardian(s)/family member(s) to decrease the incidence of substance use within this patient population.

The CRAFFT questionnaire was self-administered by the adolescent (Appendix A). A recent study found that adolescents preferred to fill out the CRAFFT screening tool themselves versus having a healthcare provider asking the questions (D'Amico et al., 2016). The CRAFFT questionnaire asks the adolescent to answer during the past 12 months, on how many days did you, a) "Drink more than a few sips of beer, wine, or any drink containing alcohol, b) Use any marijuana (weed, oil, or hash by smoking, vaping,

or in food) or synthetic marijuana (like K2 or Spice), c) Use anything else to get high (like other illegal drugs, prescription, or over-the-counter medications, and things that you sniff, huff, or vape)?" If the adolescent scored zero on the questions above, then the adolescent would answer only the "Car" question "Have you ever ridden in a car driven by someone (including yourself) who was "high" or had been using alcohol or drugs?" If the adolescent scored one or higher on any of the above a through c questions, then the adolescent would answer the following 'yes' or 'no' questions: "Have you ever ridden in a car driven by someone (including yourself) who was high or had been using alcohol or drugs? Do you ever use alcohol or drugs to relax, feel better about yourself, or fit in? Do you ever use alcohol or drugs while you are by yourself, or alone? Do you ever forget things you did while using alcohol or drugs? Do your family and friends ever tell you that you should cut down on your drinking or drug use? Have you ever gotten into trouble while you were using alcohol or drugs?" After the adolescent completes the CRAFFT questionnaire, the staff nurse scores the results with the parent still out of the treatment room. A score of zero indicates the adolescent reports no use of alcohol or drugs and should receive praise and encouragement by the staff nurse. A score of one alert the staff nurse that the adolescent needs a brief intervention on the risky behavior. A brief conversation or motivational interviewing with the adolescent was completed with the parent(s)/guardian(s)/family member(s) still out of the room. The staff nurse included statements that focused on the adverse health effects of alcohol and drugs. A score of two to six on the CRAFFT questionnaire indicated that the staff nurse needed to have a discussion with the adolescent on resources on referrals to treatment for substance use. The staff nurse discussed with the adolescent, under the age of 18, who scored a two or

greater about their concerns for the patient's risky behavior and encouraged opening the conversation with the parent(s)/guardian(s)/family member(s). If the adolescent agreed to start that conversation with the parent(s)/guardian(s)/family member(s), then the adolescent was asked exactly what information could be shared with the parent(s)/guardian(s)/family member(s) and that they heard the entire conversation. The parent(s)/guardian(s)/family member(s) of the consenting adolescent were educated on health risks associated with substance use and discussed resources on referrals to treatment. If the adolescent did not wish to have parent(s)/guardian(s)/family member(s) involvement, then the nurse just discussed the health risks and resources on referrals to treatment privately with the adolescent while the parent(s)/guardian(s)/family member(s) were out of the treatment room.

The staff nurse notified the DFES attendings about all adolescents scoring two or greater on the CRAFFT questionnaire, what intervention was provided, and if the adolescent consented to parent(s)/guardian(s)/family member(s) involvement. If the adolescent under 18 years of age consented to parental involvement, then DFES attendings reinforced education on health risk associated with these behaviors and followed up with the resources on referrals to treatment with the adolescent and the parent(s)/guardian(s)/family member(s) prior to discharge. The discussion about resources on referrals to treatment options stopped when the adolescent that did not consent to parent(s)/guardian(s)/family member(s) involvement. DFES attendings did not reinforce the discussion with the adolescent or parent(s)/guardian(s)/family member(s) for those adolescents not consenting to parental, guardian, or family member involvement.

The parent(s)/guardian(s)/family member(s) of the adolescent were not made aware of the score of the CRAFFT questionnaire, these results remained confidential, unless the adolescent granted permission. The score of the CRAFFT questionnaire was not included in the patient's medical record due to extra costs by ChristianaCare to incorporate this into electronic medical record during the implementation phase of this project change. Delaware state law states individuals 14 years and older do not require parental/guardian consent for voluntary substance use screening and/or treatment.

Project Engage collaborates with hospital staff to connect at-risk adolescents, ages 18 years and older, with community-based substance use treatment programs along with other resources. Project Engage consultants specialize in motivational interviewing to empower each patient in his or her decision-making process, while working with the hospital clinical team, treatment providers, and insurers for a specialized discharge plan so that each patient receives the best possible outcome. Therefore, patients who were 18 years and older, with a score of two or greater on the CRAFFT questionnaire could also be referred to Project Engage consultants.

After the CRAFFT questionnaire had been self-administered and scored with the needed intervention, the staff nurse documented if the CRAFFT was completed. If the CRAFFT was not completed for an adolescent that met inclusion criterion, the staff nurse documented the reason. If the CRAFFT was completed, the staff nurse documented the adolescent's age, gender, the CRAFFT score, what intervention was completed based on the CRAFFT score, and if either DFES or Project Engage was involved with the adolescent's care. Nurses were provided a form to complete after the CRAFFT screening tool with interventions was completed (Appendix K).

Phase three included the results reported and project close out. The practice change project illustrates how many adolescents are at-risk for substance use within the ED setting and that there is a gap in current practice. The project team leader analyzed all data from the staff nurse documentation form completed by the nursing staff on eligible adolescents seen within Wilmington's ED. If the CRAFFT questionnaire was completed, the age, gender, CRAFFT questionnaire results and SBIRT implementation for the adolescent was documented on the data collection form provided to the Wilmington ED. The date and time were also documented for any screening that was either completed or not completed.

### **3.5 Ethical Considerations**

IRB approval from ChristianaCare and the University of Delaware was sought out prior to project implementation. Both IRBs from ChristianaCare and the University of Delaware gave exempt status and granted this practice change project. Site compliance with the Health Insurance Portability and Accountability Act of 1996 (HIPAA), protected privacy of all participant health information. All data collected from this project excluded patient identifiers except the patient's age and gender. The risks to participants in this project were minimal. The completed CRAFFT questionnaire was placed on the patient's chart and filed per ChristianaCare protocol. The completed data collection forms were placed within a locked box in the ED for the project team leader to collect and compile data through an Excel spreadsheet through ChristianaCare's secured network. The Excel files were stored on a password-protected file at ChristianaCare on a password-protected desktop. Once the data was placed in the Excel file, the paper documents were then placed in ChristianaCare's designated bins for shredding. Potential distress that could

arise from the screening was managed by consulting with the healthcare provider on all adolescents scoring two or greater on the CRAFFT questionnaire and utilizing Project Engage consultants for those 18 years and older.

### **3.6 Data Collection and Analysis**

Data from the SBIRT model and CRAFFT questionnaire were collected twenty-four hours a day, seven days a week by the staff nurses in the Wilmington ED during an eight-week timeframe. Eight weeks for project implementation ensured sufficient time for data collection. Clinically stable adolescents with an ESI level of three, four, or five between the ages of 14 to 21 years were screened using the SBIRT model and CRAFFT questionnaire to assess risk for substance use.

The completed CRAFFT questionnaires were placed on the patient's paper chart and filed per ChristianaCare's protocol. The staff nurse placed the paper documentation form for data collection that was completed after the CRAFFT questionnaire had been administered in a locked box located within the ED. The project team leader collected completed papers weekly. The project team leader while onsite recorded patient participants' age, gender, CRAFFT score, and intervention provided based on the score using Excel software package through Office 365. The paper forms were then placed in a HIPAA compliant trash can for shredding at the Wilmington ED site. No transportation of forms outside the project site took place. The project team leader housed all data on the secure server at ChristianaCare. Data will be housed for a minimum of three years by the project team leader. After three years, the data will be destroyed per the University of Delaware protocol.

Data collected for the project included time and date of screening completed, the

adolescent's age, gender, CRAFFT score, and intervention provided based on SBIRT model. The intervention options are no intervention but provided the referral to treatment handout, brief intervention with referral to treatment handout, or discussion on the resources to referral to treatment handout. Interventions also included if the adolescent consented to parent(s)/guardian(s)/family member(s) involvement, DFES attendings reinforcement on education to health risks and resources for referrals to treatment with parents if the adolescent consents to parental involvement, and if Project Engage was consulted for those 18 years and older scoring two or higher on the CRAFFT questionnaire. The data gathered from this practice change project were patient age, gender, frequency of screens completed for each year of age, frequency of positive and negative screens for each year of age, frequency of positive responses to each item on the CRAFFT screen, and intervention provided by nursing staff based on the CRAFFT score. Obtained data from the project manager of emergency services for ChristianaCare regarding total adolescents seen during the eight-week period that met inclusion criteria for screening.

### **3.7 Project Evaluation**

This project change focused on the SBIRT model with CRAFFT questionnaire of adolescents for risky behavior of substance use in the Wilmington ED during an eight-week period and provided adolescents with brief interventions and resources on referrals to treatment. The implementation period was eight weeks for the project leader to complete education for staff nurses, Project Engage, and DFES attendings and to compile data obtained. Process measures for this project included number of adolescents screened for risky behavior during the eight-week pilot project period, score of the CRAFFT

questionnaire, and type and frequency of interventions provided to patients seen within the ED setting.

If the project is found to have a high percentage of adolescents who demonstrate risky behaviors of a CRAFFT screening score of two or greater, the project leader will prompt the Wilmington ED to adopt this intervention after the DNP project change has been completed. The department will see the significance of adopting this screening for adolescents with a visualization of the number of adolescents who could be unidentified and at risk for substance use within the ED setting. Presenting the healthcare system with results from the practice change displaying the beneficence to adolescents at risk for substance use assisted the Project Leader in encouraging sustained use of SBIRT model and CRAFFT questionnaire.

### **3.8 Project Budget**

This project was purposefully designed to require minimal financial support. Permission to use the CRAFFT screening questionnaire was free of charge and reproduced by the project team leader at no cost. The project team leader created the document for referrals to treatment and resources for substance use (Appendix G) for distribution by the nursing staff to all adolescents screened and did not impose any financial burden. Healthcare provider screenings were minimal, with a time factor of less than one minute to complete. Adolescents at risk for substance use who are identified and receive early treatment have lower cost implications than adolescents who remain unidentified and have addiction costs (Georgetown University, n.d.).

### **3.9 Project Closeout**

One of the aims of this practice change project was to gather data that would

support sustained utilization of the SBIRT model with the CRAFFT questionnaire in the Wilmington ED. The project leader analyzed data collected and shared project findings with stakeholders to encourage adoption of this practice change in the Wilmington ED and other campuses within ChristianaCare.

### **3.10 Dissemination Plan**

A report of practice change findings was presented to key stakeholders in Wilmington ED during January 2020. The project leader provided project results and discussion about project strengths and weaknesses to support future implementation. Project findings will also be disseminated at the 11<sup>th</sup> ICN NP/APN Network Conference 2020 in Halifax. A manuscript will also be created of the culmination of project findings for publication consideration in a peer reviewed journal.

## **Chapter 4**

### **RESULTS**

Results of the practice change project were collected over an eight-week implementation period. This chapter presents the results of data collected from the practice change project. The review of the literature supports the data collected.

#### **4.1 Introduction**

This Doctor of Nursing Practice (DNP) practice change project had important findings for the adolescent population and risk-taking behavior identification. These data reflect the patients' findings of participation with emergency severity index (ESI) levels three, four, or five. Patients with ESI levels of one or two were excluded from the screening due to acuity. The emergency department (ED) setting provides critical access for many patients to the healthcare system. Nearly half of all United States ED visits are categorized as related to a substance use disorder (Hawk & D'Onofrio, 2018).

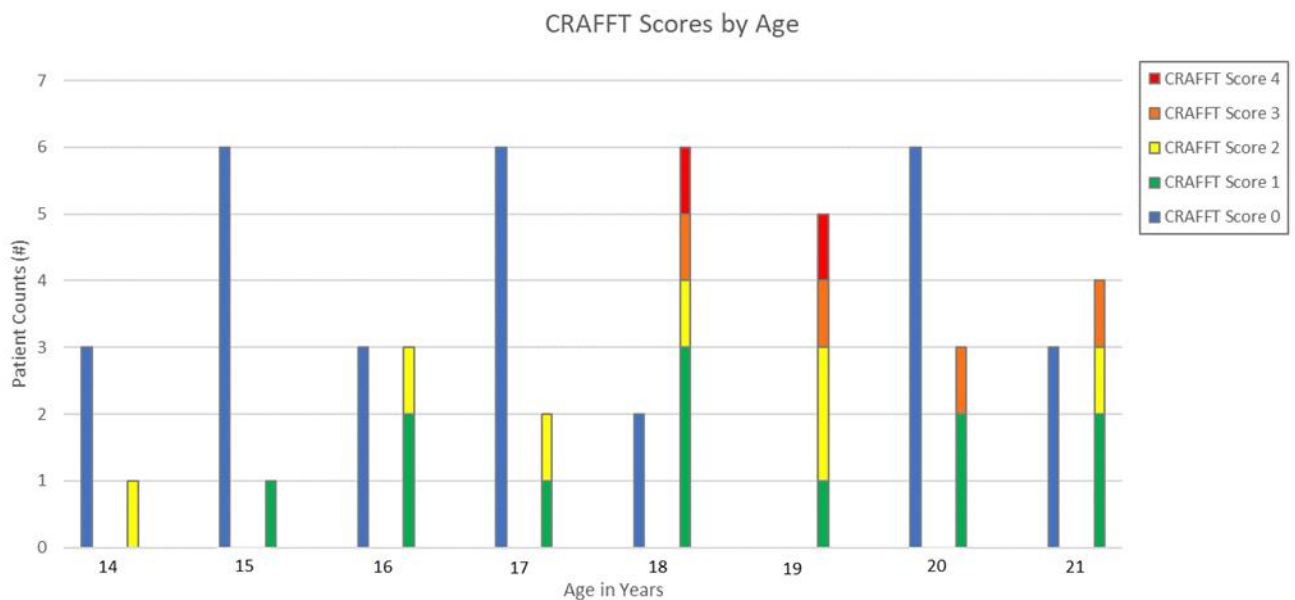
#### **4.2 Statistics**

Measures for this project included: patients who completed the Car, Relax, Alone, Forget, Friends, Trouble (CRAFFT) questionnaire, whether the patient reported any substance use, and the intervention provided based on the CRAFFT score. Demographic variables were patients' age (in years) and gender. Results from this practice change project were consistent with other research findings that demonstrated use of the CRAFFT questionnaire can identify adolescents at risk for substance use (D'Amico et al., 2016).

During project implementation, 463 adolescent patients seen in the Wilmington ED met the inclusion criteria while only 54 (12%) received the Screening, Brief

Intervention, and Referral to Treatment (SBIRT) model with CRAFFT questionnaire. The number of adolescents who met project inclusion criteria during project implementation was obtained from the project manager of emergency services at ChristianaCare. Three patients met inclusion criteria but declined the screening and were not included in this project. Of these 54 patients, 31 (57%) identified as female. Age ranged from 14 to 21 years. Figure 4.1 below presents the number of patients in each age group who screened positive and negative on the CRAFFT questionnaire.

Figure 4.1: CRAFFT Scores by Age Group



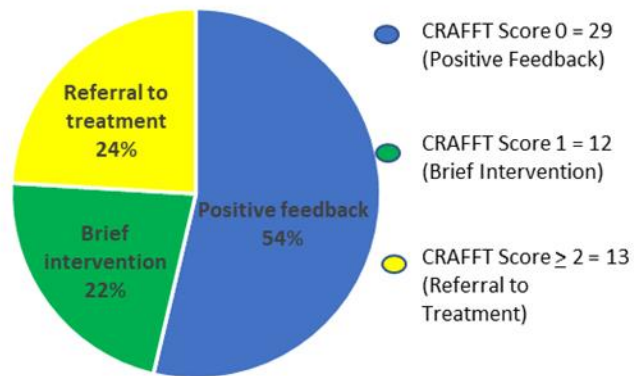
The prevalence of drug and alcohol use increases during adolescence and heightens in young adulthood (Substance Abuse and Mental Health Services Administration [SAMHSA], 2018). The National Survey on Drug Use and Health found that prevalence rates of substance use disorders is higher among the 18 to 25-year-old age group than it is in either the 12 to 17-year-old age group or the 26 and older age group (SAMHSA, 2018). Data from this practice change project support these findings as

patients with the highest risk for substance use behaviors were 18 and 19 years of age, and next highest risk scores were in patients 20 and 21 years of age.

Interventions provided to each adolescent were based on the CRAFFT score. An adolescent with a CRAFFT score of zero received positive feedback, 54% (n = 29). An adolescent with a CRAFFT score of one received a brief intervention, 22% (n = 12). Lastly, an adolescent with a CRAFFT score of two or greater received a referral to treatment, 24% (n = 13).

Figure 4.2: Interventions by Healthcare Providers

#### Intervention Based on CRAFFT Score



As a practice change intervention, the SBIRT model with the CRAFFT questionnaire was integrated as a new standard of care. The aims of this practice change project are reflected in the results. The first aim was to successfully implement the SBIRT model with the CRAFFT questionnaire to increase identification of adolescents at risk for substance use in the Wilmington ED. This project was implemented by the Wilmington Hospital ED nursing staff to determine if adolescents are demonstrating risk-taking behaviors indicative of substance use and if they require additional resources. Multiple studies indicated the SBIRT model with the CRAFFT questionnaire was

validated for use in the ED setting (Hawk & D’Onofrio, 2018; Levy et al., 2016; Newton et al., 2017; & Pringle et al., 2018). The SBIRT model with the CRAFFT questionnaire was not incorporated into the Wilmington ED electronic health record (EHR) due to financial burden for ChristianaCare. The ED nurses and attending doctors were educated in the use of the SBIRT model with the CRAFFT questionnaire. To reduce screening associated stigma and normalize the screening process, the CRAFFT questionnaire was prefaced with a statement emphasizing that the questions were asked of all adolescents between the ages of 14 to 21 years seen in Wilmington ED. Nurses stated that the CRAFFT screening and providing interventions was not time consuming and did not impede the efficiency of clinical care. The implementation of this practice change with the CRAFFT questionnaire was positive with 54 adolescents screened during a two-month trial period. All 54 adolescents screened received the resources for referral to treatment handout. These findings demonstrate that assessment of risk-taking behaviors can be accomplished in high-volume EDs when supported through nursing education.

The second aim was to identify adolescents at risk for substance use utilizing the CRAFFT questionnaire. The CRAFFT questionnaire scores between a zero, lowest score, to a six, highest score. Of the 54 patients screened, 53% (n = 29) scored a zero on the CRAFFT score which indicated there was no to low risk for substance use behaviors and received the resources for treatment options as the standard of care. Twenty-two percent (n = 12) scored a one on the CRAFFT questionnaire, indicating a moderate risk for substance use behaviors and received a brief intervention by the nursing staff with the resources to referral to treatment handout. Seven patients (13%) scored a two, four (7%) scored a three, and two (4%) scored a four on the CRAFFT questionnaire. In this practice

change project, no adolescent scored a five or six on the CRAFFT questionnaire. A CRAFFT score of two or more indicates a high risk for substance use behaviors. Patients scoring two or more on the CRAFFT screen received a brief intervention by the nursing staff and a discussion on referral to treatment options handout to encourage seeking assistance in the outpatient setting. The positive adolescent patient responses to the CRAFFT questionnaire are presented below.

Table 4.1: Adolescent’s Responses to the CRAFFT Questionnaire

<b>CRAFFT Behaviors</b>	<b>Number of Positive Responses</b>
Alone	1
Alone, Family/Friends	1
Alone, Forget	1
Car	6
Car, Forget, Family/Friends, Trouble	1
Care, Family/Friends	1
Car, Relax	2
Car, Relax, Alone	1
Car, Relax, Alone, Forget	1
Car, Relax, Family/Friends	1
Relax	4
Relax, Alone	2
Relax, Alone, Family/Friends	1
Relax, Alone, Trouble	1
Trouble	1
<b>Total Risk Behaviors Screened</b>	<b>25</b>

The third aim was to evaluate patient demographics, the frequency of the CRAFFT questionnaire administration, and correlation of health provider provision of intervention for adolescents at risk for substance use, measured by the results of patient CRAFFT questionnaire. The project leader examined differences in demographic measures and at risks behaviors according to if the patient had a positive or negative screen on the CRAFFT questionnaire. Eighteen of the patients who were 18 years or older scored a positive CRAFFT score, while seven adolescent patients under 18 years of

age scored a positive CRAFFT. Based on the findings in this practice change project, older adolescents had a greater incidence of risk-taking behaviors. Males also demonstrated a 60% higher incidence of risk-taking behaviors. This aligns with the literature that adolescent males are more likely to engage in risk-taking behaviors compared to females (Alhyas et al., 2015). All adolescents screened received additional resources on referrals to treatment for high quality substance use support within Delaware. This practice change provided an opportunity to improve the health trajectory of substance use behaviors in adolescents who receive health care in an urban ED setting.

#### **4.3 Limitations in the Data Collection**

The self-reported data from the adolescents in this study may be subject to social desirability bias. Whether some participants may have underreported and others overreported is a limitation. Patient refusal to participate (n = 3) in this practice change project had a minimal effect on data collection.

Reliance on the nursing staff to implement this practice change project is considered a limitation as not all adolescents meeting inclusion criteria were screened. There was a missed screening opportunity for 88% of adolescents presenting to the ED who met the screening criteria. The methods of educating nursing staff addressed self-efficacy and lack of training. Staff nurses who administered the SBIRT model with CRAFFT questionnaire reported no significant time barriers. Staff nurses who did not implement the SBIRT model with CRAFFT questionnaire were not asked reasoning for not implementing. Additionally, incorporation of the SBIRT model with the CRAFFT questionnaire in the electronic health record (EHR) may have further enhanced nursing staff implementation. Future recommendations for this practice change project include

interviewing nurses who do not implement the SBIRT model with CRAFFT questionnaire to identify potential barriers and to incorporate the SBIRT model with the CRAFFT questionnaire into the hospital EHR.

## **Chapter 5**

### **INTERPRETATION OF THE DATA**

Given the scope of this practice change project, identification of 25 adolescents who demonstrated risk-taking substance use behaviors and providing an intervention is a valuable project that lends support to the recommendation to have this as a sustained standard of care. This chapter discusses the sustainability and significance of the change project and implications for advanced practice.

#### **5.1 Discussion**

The Screening, Brief Intervention, and Referral to Treatment (SBIRT) model with Car, Relax, Alone, Forget, Friends, Trouble (CRAFFT) questionnaire was implemented by the nurses in Wilmington Emergency Department (ED). The SBIRT model and the CRAFFT questionnaire were implemented to determine if this practice change project would increase identification of adolescents at risk for substance use behaviors. Twelve percent of the eligible adolescents seen in the ED during the eight-week implementation phase were screened using the CRAFFT questionnaire and 46% scored a one or higher.

Screening for risk-taking behaviors during adolescence is recommended by the American Academy of Pediatrics' Bright Futures Guidelines (Boston Children's Hospital, 2018). This recommendation was placed to ensure all adolescents who may be at risk for substance use can receive needed interventions and be referred to support services. Between September and December 2018, 903 patients met inclusion criteria for this practice change project in Wilmington ED. From September 30 to November 25, 2019, 463 patients met inclusion criteria for this practice change project in Wilmington ED. In 2019, implementation of the SBIRT model with CRAFFT questionnaire screened

54 adolescents who presented to the Wilmington ED during the project time period. Staff nurses were not asked about reasoning for the 88% missed screening opportunity to understand barriers involved. If this practice change is implemented again, then identification and interviewing staff nurses who do not implement the practice change is recommended. Twenty-five patients were identified as being at risk for substance use behaviors. These 25 patients would not have been screened due to a lack of screening practice for this population in the ED. Without this project, these patients would not have received interventions to risk-taking behaviors nor would have been provided with resources on referrals to treatment. Implementation of this project provided the opportunity to screen, intervene, and provide resources for treatment options to adolescents who would have otherwise gone unnoticed.

Wilmington ED staff nurses, Project Engage consultants, and Doctors of Emergency Services (DFES) attendings were educated on the SBIRT model with CRAFFT questionnaire. Staff nurses reported a limited time burden associated with the SBIRT model and CRAFFT questionnaire implementation. This aligns with Harris and colleagues (2016) finding that screening for adolescent risk-taking behaviors adds minimal time burden to the healthcare encounter. On average, the SBIRT model with CRAFFT questionnaire added less than five minutes to the clinical encounter, and there were no reports of screening impeding the efficiency of clinical care.

The implementation of this practice change project was successful with 54 adolescents screened for risk-taking behaviors. All adolescents screened received resources for referrals to treatment to increase awareness of resources available. Fifty-four percent of adolescents screened received positive feedback for a CRAFFT score of

zero to increase the likelihood that adolescents would engage in appropriate behaviors. Twenty-two percent of adolescents screened received a brief intervention in relation to the CRAFFT behavior. Brief interventions have shown to significantly decrease initiation of drinking and increase cessation rates for alcohol and marijuana use among adolescents (Substance Abuse and Mental Health Services Administration [SAMHSA], 2018).

Twenty-four percent of adolescents screened received a discussion on the CRAFFT behavior and resources of referrals to treatment. These adolescents were provided the information they need to enter treatment from school, medical, and community sources. Implementation of the SBIRT model with CRAFFT questionnaire allowed staff nurses the opportunity to discuss substance use and resources readily available for treatment in Delaware with each adolescent screened.

## **5.2 Project Limitations**

These practice change project findings must be interpreted considering inherent project limitations. The findings are not generalizable because the patient population was a small size, in an Urban ED setting, that was limited to English-speaking adolescents ages 14-21 years with an emergency severity index (ESI) of three, four, or five. Future work should extend to non-English speaking patient and nonurban ED settings.

## **5.3 Sustainability of the Project**

This Doctor of Nursing Practice (DNP) practice change project addresses a gap of not screening adolescents for at-risk substance use behaviors and providing interventions accordingly in the Wilmington ED. Improving upon limitations of extending the inclusion criteria, relying on nursing staff to implement the practice change, and the inability to incorporate the SBIRT model and CRAFFT questionnaire in the EHR would

support sustainability of this project. The DNP project leader implemented an evidence-based practice method of screening via the SBIRT model with the CRAFFT questionnaire. The project was low cost, easily implemented, and deemed favorable by the ED nursing staff who adopted this practice change.

Fifty-four of the 463 adolescent patients seen in the Wilmington ED who met inclusion criteria, were screened. Twenty-five (46%) of these adolescents scored a one or higher on the CRAFFT questionnaire. All adolescents screened received the resources on referral to treatment handout. These data represent how positive and important this project is for this site and why screening for risk-taking behaviors is needed for this patient population. Leadership for ChristianaCare were provided these data to appreciate the gap in current practice regarding the percentage of adolescent patients at risk for substance use behaviors in need of interventions who are seen in the ED. Healthcare systems are encouraged to implement and examine this practice change project to extend to more ED locations.

A substance use risk-taking behavior screening was implemented at low cost and promoted improved nursing practice and patient outcomes in the ED. Consideration of how the CRAFFT questionnaire was administered is important. For the purpose of this practice change project, the CRAFFT questionnaire was self-administered on paper forms and parent(s)/guardian(s)/family member(s) were asked to leave the patient care area while the questionnaire was completed to foster truthfulness. Future considerations for sustainability include cost to the hospital, barriers to adoption by nursing staff, incorporation into the EHR, and patient benefits of potential early identification and interventions to risk-taking behaviors.

Amidst COVID-19, the anticipated trajectory of this practice change project steered off course; however, future DNP students could assist with sustainability. In future DNP project implementation follow-up patient phone calls for adolescents with CRAFFT scores two or greater to inquire if resources were utilized could assist with effectiveness and sustainability. Healthcare systems and/or future DNP students adopting this practice change project may follow up four to six weeks after the ED visit to improve transitional care management. Variations of ICD10 codes would also be of interest in future recommendations.

#### **5.4 Significance of the Change Project**

This practice change project locally impacts adolescents between the ages of 14 to 21 years of age seeking treatment in the ED at Wilmington Hospital through increased identification of risk-taking behaviors that can lead to substance use via the SBIRT model with the CRAFFT questionnaire. Utilization of the CRAFFT questionnaire allowed nurses to quickly identify adolescents who demonstrate risk-taking behaviors through assessment of substances used within the past year and behaviors of driving while under the influence or using substances to relax or have fun. Inclusion of this screening in this population during ED visits has the potential to intervene during the early stages of substance use and prevent future risk-taking behaviors by providing resources on referrals to treatment in Delaware. Implementation of the project increases healthcare providers awareness of the need to screen for risk-taking behaviors, as well as the importance and impact in preventative medicine for these adolescent patients.

This project change may also impact healthcare costs, injuries, and potential deaths that could arise from substance use among adolescents over time. This DNP

practice change project demonstrates that the SBIRT model with the CRAFFT screening questionnaire identified at-risk adolescents easily and took less than five minutes to complete. Use of the SBIRT model coupled with the CRAFFT questionnaire allowed interventions and referrals to treatment to adolescents with positive and negative CRAFFT scores. All adolescents screened during project implementation benefited from positive reinforcement on good behaviors, brief interventions, or resources on referrals to treatment.

### **5.5 Implications for Advanced Practice**

Screening and referral systems for risk-taking behaviors indicative of substance use in the primary care setting have been shown to increase the adolescents' ability to engage with community-based resources (D'Amico et al., 2016). However, many low-income patients utilize the ED or other acute care settings because they lack access to a primary care provider (Hayes, 2019). In alignment with the American Academy of Pediatrics' Bright Futures Guidelines, adolescents receiving preventative screening using the CRAFFT questionnaire along with education and discussions become a priority within the healthcare community (Boston Children's Hospital, 2018). Emergency nurses are educated to effectively screen and assess individuals for substance use disorders seeking treatment (Emergency Nurses Association, 2016). The use of approved standards and reliable resources allows emergency nurses to deliver appropriate treatments, provide educational opportunities, and advocate for patients in prevention of substance use. Doctors of Nursing Practice (DNP) understand the translation of expert clinical knowledge into practice and can collaborate and drive this practice change (Edwards, Coddington, Erler, & Kirkpatrick, 2018). Registered Nurses, Advanced Practice

Registered Nurses (APRNs), and DNPs can be the nexus to drive this priority as proponents of practice change, patient advocates who strive to improve upon patient and community outcomes (Christiansen, & Champion, 2018).

## **5.6 Conclusion**

It is imperative that the results of this practice change project are disseminated to leadership within ChristianaCare and professional nursing organizations and journals. Project findings were presented to the vice president of Emergency Services, ED management, Project Engage Leadership, and nursing staff within the Wilmington ED. As a result of these data findings, Project Engage expanded substance use treatment services from patient ages 18 years and older to patients 14 years and older. This project is also being presented at the University of Delaware during academic and peer discussions.

This practice change project was accepted for presentation at the College of Health Sciences Research Day at the University of Delaware and in ChristianaCare Grand Rounds. Both presentations have been postponed due to COVID-19 outbreak Spring 2020. Postponed presentations of this practice change will assist in the promotion of and potential adoption in the Wilmington ED and other ChristianaCare sites.

The findings of this project will also be disseminated at the 11<sup>th</sup> International Council of Nurses Nurse Practitioner and Advanced Practice Nurses Network Conference 2021 in Halifax. This conference is one of the largest international conferences for advanced practice nursing (International Council of Nurses, 2020). The conference will provide the opportunity for nurse practitioners, clinical nurse specialists, nurse anesthetists, nurse midwives, researchers, educators, administrators, and policy makers to

learn about implementation findings of this practice change project. Future presentations will highlight the importance of early screening for preventative treatment of substance use within the adolescent population.

Many American adolescents demonstrate risk-taking behaviors (Levy et al., 2016). The present study provides support for the usefulness of the CRAFFT questionnaire for adolescent patients seen in the ED setting. Given the prevalence of substance use rates seen in the adolescent population, the ED setting offers an opportunity to systematically screen and intervene on risk-taking behaviors. Adolescents demonstrating risk-taking behaviors may benefit from the healthcare team-based approach of the SBIRT model and CRAFFT screening questionnaire when integrated into the ED setting.

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## Appendix A

### CRAFT QUESTIONNAIRE

To be completed by patient  
Please answer all questions honestly; your answers will be kept confidential

**During the PAST 12 MONTHS, on how many days did you:**

<b>1.</b> Drink more than a few sips of beer, wine, or any drink containing <b>alcohol</b> ? Put "0" if none.	_____ # of days
<b>2.</b> Use any <b>marijuana</b> (weed, oil, or hash by smoking, vaping, or in food) or " <b>synthetic marijuana</b> " (like "K2" or "Spice")? Put "0" if none.	_____ # of days
<b>3.</b> Use <b>anything else to get high</b> (like other illegal drugs, prescription or over-the-counter medications, and things that you sniff, huff, or vape)? Put "0" if none.	_____ # of days

**READ THESE INSTRUCTIONS BEFORE CONTINUING:**

**If you put "0" in ALL of the boxes above, ANSWER QUESTION 4, THEN STOP.**

**If you put "1" or higher in ANY of the boxes above, ANSWER QUESTIONS 4-9.**

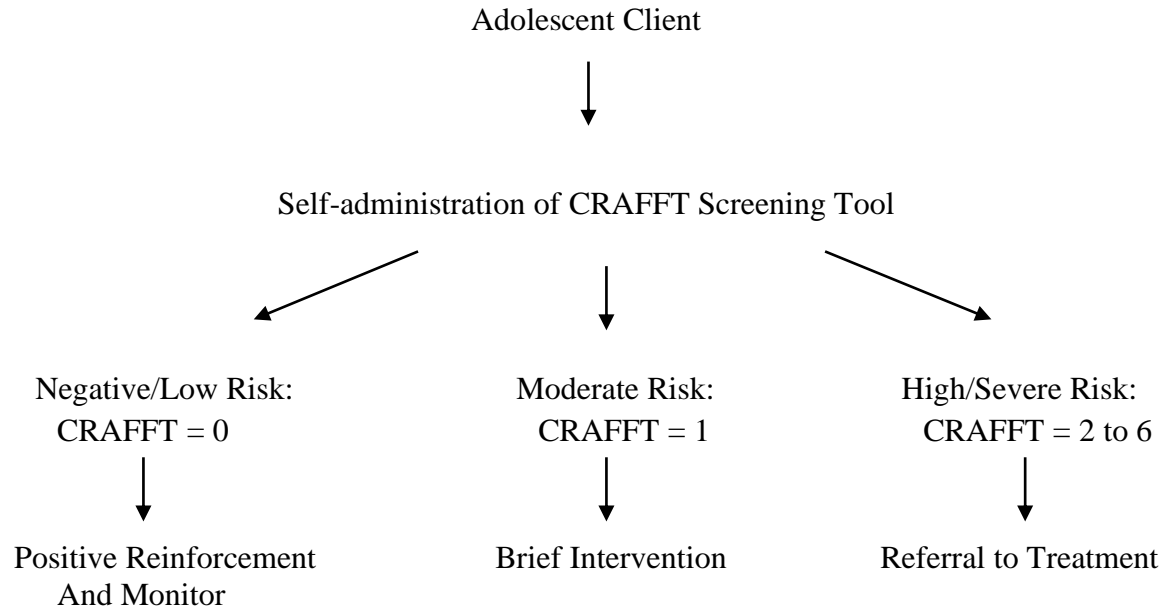
Please circle either NO or YES

<b>4.</b> Have you ever ridden in a <b>CAR</b> driven by someone (including yourself) who was "high" or had been using alcohol or drugs?	<b>NO</b>	<b>YES</b>
<b>5.</b> Do you ever use alcohol or drugs to <b>RELAX</b> , feel better about yourself, or fit in?	<b>NO</b>	<b>YES</b>
<b>6.</b> Do you ever use alcohol or drugs while you are by yourself, or <b>ALONE</b> ?	<b>NO</b>	<b>YES</b>
<b>7.</b> Do you ever <b>FORGET</b> things you did while using alcohol or drugs?	<b>NO</b>	<b>YES</b>
<b>8.</b> Do your <b>FAMILY</b> or <b>FRIENDS</b> ever tell you that you should cut down on your drinking or drug use?	<b>NO</b>	<b>YES</b>
<b>9.</b> Have you ever gotten into <b>TROUBLE</b> while you were using alcohol or drugs?	<b>NO</b>	<b>YES</b>

**NOTICE TO CLINIC STAFF AND MEDICAL RECORDS:** The information on this page is protected by special federal confidentiality rules (42 CFR Part 2), which prohibit disclosure of this information unless authorized by specific written consent. A general authorization for release of medical information is NOT sufficient. © **John R. Knight, MD, Boston Children's Hospital, 2016.** Reproduced with permission from the Center for Adolescent Substance Abuse Research (CeASAR), Boston Children's Hospital. For more information and versions in other languages, see [www.ceasar.org](http://www.ceasar.org)

## Appendix B

### SBIRT ALGORITHM WITH CRAFFT QUESTIONNAIRE



Stanhope, V., Manuel, J. L., Jessell, L., & Halliday. (2018). Implementing SBIRT for adolescents within community mental health organizations: A mixed method study. *Journal of Substance Abuse Treatment, 90*, 38-46.

## Appendix C

### PERMISSION TO USE CRAFFT QUESTIONNAIRE

Lauren Brooking, RN, BSN, DNP/FNP Student  
Christiana Care Health Systems

October 8, 2018

Lauren Brooking,

Thank you for your interest in the CRAFFT screen developed by the Center for Adolescent Substance Abuse Research (CeASAR) at Boston Children's Hospital. We have reviewed the final draft of the CRAFFT reproduction that you submitted, and we are pleased to give you permission to utilize this final version, under the following conditions:

- 1) Permission to copy and distribute the CRAFFT screening is limited to the files that you sent to CeASAR for approval on 10/06/18. Changes to the final drafts, other than for changes in contact information (street or mailing address, telephone, e-mail, or URL) require a separate approval and permission letter.
- 2) You must agree to provide the copies of the CRAFFT free of charge. Copies of the CRAFFT cannot be sold separately from your program.

We are hopeful that you will find the CRAFFT screening tool useful in your endeavors. Please feel free to call us at 617-355-5433 if you would like further information or assistance.

Sincerely,  
Jordan Levinson

Jordan Levinson  
CRAFFT Screening Copyright Coordinator  
Center for Adolescent Substance Abuse Research (CeASAR)  
Boston Children's Hospital  
300 Longwood Avenue LO-306  
Boston, MA 02115

## Appendix D

### REVIEW OF LITERATURE TABLE

Author/Date	Conceptual Framework	Rating/Method	Sample/Setting	Major Variables Studied & Their Definitions	Measurement	Data Analysis	Findings	Appraisal Worth to Practice
<p>Agley, J., Gassman, R. A., Jun, M., Nowicke, C., &amp; Samuel, S. (2015). Statewide administration of the CRAFFT screening tool: Highlighting the spectrum of substance use. <i>Substance Use &amp; Misuse</i>, 50(13), 1668-1677. doi: 10.3109/10826084.2015.1027930</p>	None	<p>Level II/ A</p> <p>quantitative</p> <p>Secondary analysis of data collected</p>	n= 2,193 at the School of Public Health at Indiana University.	DV: Score on the CRAFFT tool, sociodemographic variable, age of first use of alcohol, poly drug use, risk/protective factors.	Uniformity of use across substance-using adolescents, score on the CRAFFT tool, sociodemographic variables, age of first use of alcohol, poly drug use, risk/protective factors	Multinomial logit analyses (STATA, version 9) to highlight variables: sociodemographic data, poly-drug use, and risk/protective behavior scales	<p>Seriousness of use <u>not uniform</u> among adolescents using substance, 49% = non-problem users, 33% = problem users, 18% = dependent users.</p> <p>Predictors of severity of substance use in adolescents are risk/protective factors. Poly-drug use is major indicator of problem &amp; dependent use.</p>	<p>CRAFFT provides a better perspective of adolescent substance use than frequency data alone.</p> <p>Importance of feasibility of administering a screening tool. First study to demonstrate relationship of adolescents who report use of multiple substances are at increased risk for problem/dependent use as assessed by the CRAFFT tool.</p>

Author/Date	Conceptual Framework	Rating/ Method	Sample/Setting	Major Variables Studied & Their Definitions	Measurement	Data Analysis	Findings	Appraisal Worth to Practice
Alhyas, L., Al Ozaibi, N., Elarabi, H., El-Kashef, A., Wanigaratne, S., Al Ghaferi, H. (2015). Adolescents' perception of substance use and factors influencing its use: A qualitative study in Abu Dhabi. <i>Journal of the Royal Society of Medicine</i> , 6(2), 1-12. doi: 10.1177/2054270414567167	None	Level III/ A  qualitative  Qualitative Study with focus group approach	n= 41 adolescents in Abu Dhabi, United Arab Emirates	Adolescent awareness of substance use, patterns of substance use, associated harm, adolescent perception on effects of substance use	Perception of adolescent substance use and factors that influence use of substances	Audio-recorded interviews transcribed verbatim and uploaded to QRS NVivo (version 8.0) software. Facilitated data arrangement and coding. Tables and diagrams used to display relationships between categories	Knowledge of substances and consequences identified in adolescents. Factors that influence substance use: parent-adolescent relationship, peer pressure, substance accessibility, religiosity, and others. Factors increase risk of substance use in adolescents.	Study successful in exploring adolescents' awareness of substance use and health effects surrounding use. Identified risk/protective factors based on perceptions of adolescents which guide planning, designing, and implementing prevention programs.

Author/Date	Conceptual Framework	Appraisal/Rating	Sample/Setting	Major Variables Studied & Their Definitions	Measurement	Data Analysis	Findings	Appraisal Worth to Practice
Ammerman, B. A., Steinberg, L., & McCloskey, M. S. (2016). Risk-taking behavior and suicidality: The unique role of adolescent drug use. <i>Journal of Clinical Child &amp; Adolescent Psychology</i> , 47(1), 131-141. doi: 10.1080/15374416.2016.1220313	None	Level I / A  quantitative  Data analysis from the National Longitudinal Study of Adolescent Health	n= 4,834 adolescents for in-home interviews	Latent variable: risky sexual behaviors, tobacco / alcohol use, illicit drug use, delinquent behavior, violent behavior	Risky sexual behavior, illicit drug use, tobacco and alcohol use, delinquent behavior, violent behavior, suicidal thoughts/ behaviors.	Factor analysis conducted to assess fit of observed variables. Latent autoregressive used to assess influence of risk-taking variable. Structural equation models (SEM) for suicidal ideations. Model fit based on root mean square error of approximation (RMSEA) below 0.06 & comparative fit index (CFI) greater than 0.90. All analysis conducted in Mplus Version 7.0	Nearly all assessed risk-taking behaviors were independently associated with suicidal ideation concurrently & prospectively. Illicit drug use was the only significant indicator for suicidal ideation concurrently and prospectively. Illicit drug use has stronger association with suicidal thoughts & behaviors	Filled the gap of association between different risk-taking behaviors & suicidal thoughts/ behaviors by examining simultaneous influences of multiple risk-taking behaviors seen in adolescents. Implications for prevention & intervention programs of substance use for adolescents.

Author/Date	Conceptual Framework	Appraisal/Rating	Sample/Setting	Major Variables Studied & Their Definitions	Measurement	Data Analysis	Findings	Appraisal Worth to Practice
Crowley, R. A., & Kirschner, N. (2015). The integration of care for mental health, substance abuse, and other behavioral health conditions into primary care: Executive summary of an American College of Physicians position paper. <i>Ann Intern Med</i> , 163, 298-299. doi: 10.7326/M15-0510	None	Level IV/ A  quantitative  Policy paper - Review of studies, policy documents, web sites, and other sources and provided recommendations	Reviewed literature and input from the ACP's Board of Governors, Board of Regents, Council of Early Career Physicians, Council of Resident/Fellow Members, Council of Student Members, & Council of Subspecialty Societies and nonmember experts in the field	Concepts of behavioral health: behavioral health conditions, integration of behavioral health and physical health, support for integration of behavioral health care in the primary care setting, and barriers to <u>integration</u> .	Recommendations based on reviewed literature	Review of studies, reports, surveys, web sites, & other sources on the integration of behavioral health	American College of Physicians (ACP) supports integration of behavioral health into primary care, removing barriers that impede behavioral health treatment, insurance cover gaps to integrated care, increased research for integrate behavioral healthcare, continue to educate providers, & initiate programs to reduce stigma to behavioral health.	Primary care office may be the only setting where behavioral health issues can be addressed and treated. Importance of the healthcare system effectively addressing behavioral health conditions.

Author/Date	Conceptual Framework	Appraisal/Rating	Sample/Setting	Major Variables Studied & Their Definitions	Measurement	Data Analysis	Findings	Appraisal Worth to Practice
D'Amico, E., Parast, L., Meredith, L. S., Ewing, B. A., Shadel, W. G., & Stein, B. (2016). Screening in primary care: What is the best way to identify at-risk youth for substance use? <i>Pediatrics</i> , 138(6), 1-9. doi: 10.1542/peds.2016-1717	None	Level II/ A  quantitative  Comparison of psychometric performance of screening tools	4 clinics (1 in Los Angeles, 3 in Pittsburgh), n= 1573 youth between ages 12 through 18 years during well visits	IV: screening tool DV: different settings and ages of participants	Best tool to identify substance use in adolescents (sensitivity & specificity)	Examined proportion of youth identified at risk using different screening tools. Screeners with multiple risk categories used the lowest established risk threshold to dichotomize adolescents into low and high categories. Had less than 2.5% of data missing and analysis performed using R version 3.2.4	The CRAFFT identified more at-risk adolescents for alcohol and marijuana use than other screening tools.	Providers need a screening tool that can easily be implemented into practice and the CRAFFT has a sensitivity of 0.97 in the identification of at-risk adolescents.

Author/Date	Conceptual Framework	Appraisal/Rating	Sample/Setting	Major Variables Studied & Their Definitions	Measurement	Data Analysis	Findings	Appraisal Worth to Practice
Harris, S. K., Knight, J. R., Van Hook, S., Sherritt, L., Brooks, T., Saitz, R. (2016). Adolescent substance use screening in primary care: Validity of computer self-administered vs. clinician-administered screening. <i>Subst Abuse</i> , 37(1), 197-203. doi: 10.1080/08897077.2015.1014615	None	Level I / A  quantitative  Randomly assigned participants	n=136 adolescents in 3 large, urban, teaching hospital-affiliated primary care offices in Massachusetts	IV: Primary care setting and validation measures DV: computer vs. clinician administered screening	Validity of computer self-administration compared to clinician-administered screening	Validation of opening questions done by collapsing Timeline Follow-Back (TLFB) interview data into dichotomous variable & examined sensitivity/specificity. Validity = variable derived from ADI. Calculated sensitivity, specificity, & positive likelihood ratios & negative likelihood ratios. Calculated 95% confidence intervals using SUDAAN v.10.0. Calculated generalized linear mixed modeling.	27% of adolescents in the study reported use of any substance (including tobacco) in last 12 months, 7% met criteria for an alcohol or cannabis use disorder, and 4% were hooked on nicotine.	Sensitivity and specificity was high on detection of substance use within last 12 months and mean completion time for self-administration of screening tool was faster than clinician-administered screening tool.

Author/Date	Conceptual Framework	Appraisal/Rating	Sample/Setting	Major Variables Studied & Their Definitions	Measurement	Data Analysis	Findings	Appraisal Worth to Practice
Harris, B. R., Shaw, B. A., Sherman, B. R., & Lawson, H. A. (2016). Screening, brief intervention, and referral to treatment for adolescents: Attitudes, perceptions, and practice of New York school-based health center providers. <i>Substance Abuse</i> , 37(1), 161-167. doi: 10.1080/08897077.2015.1015703	None	Level II/ A  quantitative  Web-based survey that was pilot tested by selected SBHC program directors and clinicians	n= 162 New York States SBHC program directors and clinicians serving middle & high school students	IV: SBIRT practice DV: attitudes and perceptions of program directors and clinicians	Attitudes, perceptions, and barriers to practice of SBIRT. Self-efficacy & perceived role responsibility	Perceptions of all components, effectiveness of helping students achieve change in substance use, & attitudes regarding substance use scored on 5-point Likert scale ("strongly disagree" to "strongly agree"). Independent-samples t tests used for differences between professional roles.	Only 22% of participants use SBIRT in practice, less than 30% of the participants felt they could be effective in reducing student substance use, 63% did not believe it to be their role to use screening tools, & 20 to 30% did have confidence in performing aspects of intervention or management	SBIRT endorsed by the American Academy of Pediatrics as evidence-based strategy to address risky behavior in adolescents

Author/Date	Conceptual Framework	Appraisal/Rating	Sample/Setting	Major Variables Studied & Their Definitions	Measurement	Data Analysis	Findings	Appraisal Worth to Practice
Levy, S., Weiss, R., Sherritt, L., Ziemnik, R., Spalding, A., Van Hook, S., & Shrier, L. A. (2014). An electronic screen for triaging adolescent substance use by risk levels. <i>JAMA Pediatr.</i> 168(9), 822-828. doi: 10.1001/jamapediatrics.2014.774	None	Level II/ A  quantitative  Quantitative study	n= 216, two outpatient primary care centers and one outpatient center for substance use treatment in pediatric hospital	Psychometric properties of electronic screen and assessment tool to triage adolescents	Electronic screening for triaging adolescents	Univariate analysis to calculate frequencies for demographic factors. SUDAAN statistical software, version 11.0.0 (RTI International)	Sensitivity & specificity were 100% & 84% for identification of non-tobacco use, 90% & 94% for substance use disorders, 100% & 94% for severe substance use, & 75% for nicotine dependence	Assessing past year frequency use of substances that is used in the CRAFFT screening tool is a valid method to identify adolescent substance use

Author/Date	Conceptual Framework	Appraisal/Rating	Sample/Setting	Major Variables Studied & Their Definitions	Measurement	Data Analysis	Findings	Appraisal Worth to Practice
McNeely, J., Kumar, P. C., Rieckmann, T., Sedlander, E., Farkas, S., & Rotrosen, J. (2018). Barriers and facilitators affecting the implementation of substance use screening in primary care clinics: A qualitative study of patients, providers, and staff. <i>Addict Sci Clin Pract</i> , 13(8), 1-15. doi: 10.1186/s13722-018-0110-8	Knowledge to Action (KTA) framework	Level III/A  qualitative  Focus groups and individual interviews	n=67 stakeholders in two urban academic health systems (New York City health system & Oregon Health & Science University).	IV: medical provider, staff, patients DV: interviews tailored to participant group	Barriers and facilitators of patients, providers, and staff to implementing substance use screening	Interviews transcribed verbatim from audio recordings, withholding names. Research assistant who attended focus groups verified transcripts. Transcripts entered into Atlas.ti (7.0) software for data management and analysis. Two researchers reviewed each focus group & interview transcript.	Having knowledge of patient substance use is important for health & medical care, substance use is not properly identified in medical settings, universal screening is best approach. Patients express concern for consequences of disclosure of drug use, confidentiality, and personal reluctance. Most patients and providers prefer self-administered screening approaches.	Support for substance use screening as valuable part of medical care. Screening programs should have clear communication of goals to screening and proactively counteract substance use stigma. Address staff concerns regarding time & workflow. Provide education and treatment resources.

Author/Date	Conceptual Framework	Appraisal/Rating	Sample/Setting	Major Variables Studied & Their Definitions	Measurement	Data Analysis	Findings	Appraisal Worth to Practice
Mitchell, S. G., Gryczynski, J., O'Grady, K. E., & Schwartz, R. P. (2013). SBIRT for adolescent drug and alcohol use: Current status and future directions. <i>J Subst Abuse Treat</i> , 44(5), 463-472	None	Level V/ A  quantitative  Randomized control trials	Randomized control trials in primary care in Los Angeles (n=42), emergency departments in urban U.S. (n= 6 large random-assignment studies), schools in London (n=17), & other community settings in London (n=342)	IV: Adolescent SBIRT RCTs and elements of SBIRT model DV: Screening, brief intervention, referral to treatment, outcome findings per setting	SBIRT for adolescent drug and alcohol use	Sample size too small and likely to be underpowered. SBIRT can screen many individuals quickly, find cases in initial stages of substance use, and provide intervention. SBIRT can be used in many different settings	Fewer studies being conducted in primary care clinics, schools, & community settings. None addressed referral to treatment. Need for additional research to fill gaps in evidence was identified	SBIRT model is well-suited for the identification and intervention of adolescents at risk for substance use

Author/Date	Conceptual Framework	Appraisal/Rating	Sample/Setting	Major Variables Studied & Their Definitions	Measurement	Data Analysis	Findings	Appraisal Worth to Practice
Newton, A. S., Soleimani, A., Kirkland, S. W., & Gokiert, R. J. (2017). A systematic review of instruments to identify mental health and substance use problems among children in the emergency department. <i>Academic Emergency Medicine, 24</i> (5), 552-568.	None	Level IV/ B  quantitative  Systematic review of 7 electronic databases	4,832 references screening. Only 14 met inclusion criteria. The 14 studies that met criteria, evaluated 18 instruments	General screening, suicide risk, alcohol use disorders, screening tools	Standardized form assessing study characteristics, characteristics of the study population, study setting, instrument description, reference standard, & results. Used two viewers for completeness and accuracy.	Evidence tables, data extraction, and descriptive analysis	Valid and reliable screening tools are available to be used in the pediatric mental health visits and can be implemented with the emergency setting.	CRAFFT takes less than five minutes to complete

Author/Date	Conceptual Framework	Appraisal/Rating	Sample/Setting	Major Variables Studied & Their Definitions	Measurement	Data Analysis	Findings	Appraisal Worth to Practice
Stanhope, V., Manuel, J. I., Jessell, L., & Halliday, T. M. (2017). Implementing SBIRT for adolescents within community mental health organizations: A mixed methods study. <i>Journal of Substance Abuse Treatment</i> , 90(2018), 38-46.	Conceptual Framework for Implementation Research (CFIR) constructs	Level II/ A  quantitative  Completion of surveys on adoption of SBIRT & implementation on barriers. Mixed methods of quantitative (frequency of SBIRT) & qualitative data (barriers to implementation)	n= 2873 adolescents in 27 community mental health organizations serving adolescents across 6 states	No control groups (all adolescents were screened)	The frequency of SBIRT completed & the barriers to implementation measured	Quantitative: Stata/MP 14.0. Compared demographic & clinical data of adolescents with positive screens. Pearson's chi-square tests used & alpha value $p < .05$ used. Qualitative: longitudinally. Narrative analyzed quarterly with 3 step coding approach.	52.8% of adolescents screened were positive for drug or alcohol use. Those who received brief intervention or treatment referrals had higher drug scores. Barriers to implement include adaptability & complexity of SBIRT	Over half of the adolescent population screened had a positive score demonstrating the unmet need of screening this population.

## Appendix E

### JOHNS HOPKINS NURSING EVIDENCE-BASED PRACTICE RATING SCALE

STRENGTH of the Evidence	
<b>Level I</b>	Experimental study/randomized controlled trial (RCT) or meta analysis of RCT
<b>Level II</b>	Quasi-experimental study
<b>Level III</b>	Non-experimental study, qualitative study, or meta-synthesis.
<b>Level IV</b>	Opinion of nationally recognized experts based on research evidence or expert consensus panel (systematic review, clinical practice guidelines)
<b>Level V</b>	Opinion of individual expert based on non-research evidence. (Includes case studies; literature review; organizational experience e.g., quality improvement and financial data; clinical expertise, or personal experience)

QUALITY of the Evidence		
<b>A High</b>	Research	consistent results with sufficient sample size, adequate control, and definitive conclusions; consistent recommendations based on extensive literature review that includes thoughtful reference to scientific evidence.
	Summative reviews	well-defined, reproducible search strategies; consistent results with sufficient numbers of well defined studies; criteria-based evaluation of overall scientific strength and quality of included studies; definitive conclusions.
	Organizational	well-defined methods using a rigorous approach; consistent results with sufficient sample size; use of reliable <b>and</b> valid measures
	Expert Opinion	expertise is clearly evident
<b>B Good</b>	Research	reasonably consistent results, sufficient sample size, some control, with fairly definitive conclusions; reasonably consistent recommendations based on fairly comprehensive literature review that includes some reference to scientific evidence
	Summative reviews	reasonably thorough and appropriate search; reasonably consistent results with sufficient numbers of well defined studies; evaluation of strengths and limitations of included studies; fairly definitive conclusions.
	Organizational	Well-defined methods; reasonably consistent results with sufficient numbers; use of <b>reliable and valid</b> measures; reasonably consistent recommendations
	Expert Opinion	expertise appears to be credible.
<b>C Low quality or major flaws</b>	Research	little evidence with inconsistent results, insufficient sample size, conclusions cannot be drawn
	Summative reviews	undefined, poorly defined, or limited search strategies; insufficient evidence with inconsistent results; conclusions cannot be drawn
	Organizational	Undefined, <b>or</b> poorly defined methods; insufficient sample size; inconsistent results; undefined, poorly defined or measures that lack adequate reliability or validity
	Expert Opinion	expertise is not discernable or is dubious.

*\*A study rated an A would be of high quality, whereas, a study rated a C would have major flaws that raise serious questions about the believability of the findings and should be automatically eliminated from consideration.*

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## Appendix F

### SAMPLE DISCUSSIONS OF BRIEF INTERVENTIONS

- Provide information and feedback about the CRAFFT screening result
- Understand the adolescent's perspective of his or her use and then motivate the adolescent to change his or her perception about their use
- Ask the adolescent to discuss his or her views on how their use led to an injury, likes and dislikes about their substance use, and how they could consider changing their risky behavior
- Provide informational feedback about the harmful effects of substance use and the long-term effects substance use can have
- Advising the adolescent in clear but respectful terms to decrease or abstain from substance use

Retrieved from Substance Abuse and Mental Health Services Administration [SAMHSA]. (n.d.). *SBIRT: Screening*. Retrieved from <https://www.integration.samhsa.gov/clinical-practice/sbirt/screening>

## Appendix G

### REFERRAL TO TREATMENT HANDOUT

#### Concerned about a adolescent substance use?

A treatment center could be just what your teenager needs to help them with their substance use. The most successful method to help your teenager overcome their substance use is choosing a program specifically geared towards your teen. Teens who struggle with substance use can benefit from addiction treatment that is specifically designed to help your son or daughter.

Substance use treatment options for teens include:

**Counseling:** Counseling can be at the individual, group, or family level. Counseling emphasizes on overcoming substance use, building skills, following a recovery plan, and reaching goals.

**Holistic Rehabilitation Treatment:** Alternative methods for treating drug and alcohol addiction include nutritional therapy, exercise, meditation, massage, and acupuncture.

**Inpatient and/or Partial Hospitalization:** Centers that provide living accommodations for adolescents most often provide short-term treatment of a few days to a few weeks. Detoxification or medically managed withdrawal symptoms are the focus these programs.

**Intensive Outpatient Treatment:** Intensive outpatient care is an alternative to inpatient treatment. Adolescents attend treatment sessions multiple times per week. When the adolescent is ready, they step down to regular outpatient treatment.

**Peer Supporters or Sponsors:** By sharing experiences from peer supporters about their own journeys, these individuals can help your adolescent recover from substance use. Teens are more likely to be motivated to overcome their addictions with the help of someone who truly understands what he or she are going through.

#### Signs of Addiction:

Physical:	Emotional:
<ul style="list-style-type: none"><li>• Altered sleeping habits</li><li>• Rapid weight loss</li><li>• Frequent nosebleeds</li><li>• Unexplained cuts &amp; itchy skin</li><li>• Poor hygiene</li></ul>	<ul style="list-style-type: none"><li>• Unexplained mood swings</li><li>• School or work disturbances</li><li>• Secrecy</li><li>• Sense of desperation</li><li>• Paranoia</li></ul>

**Find a Teen Rehab Center Near You:**  
**(888) 491-9021**

Facility	Phone / Website	Address	Services
Brandywine Counseling and Community services*	302-472-0381	2500 W 4 <sup>th</sup> St – Suite 38 Wilmington, DE 19805	Early intervention services, outreach education, outpatient/family counseling, and engagement services.
Dover Behavioral Health*	302-741-0140	725 Horsepond Road Dover, DE 19901	Outpatient counseling, inpatient partial hospitalization, & holistic rehabilitation treatment
MeadowWood Behavioral Health*	302-328-3330	575 S Dupont Hwy, New Castle, DE 19720	Inpatient program for teens experiencing a crisis from mental health issues to substance use
School-Based Health Centers*	Visit <a href="https://dhss.delaware.gov/dhss/dph/chcs/dphshhcceninfo01.htm">https://dhss.delaware.gov/dhss/dph/chcs/dphshhcceninfo01.htm</a> to see if your teens elementary or high school participates	Located throughout New Castle, Kent, & Sussex County	Individual, group, & family counseling/ Substance use counseling & referrals/ Referrals for long-term counseling – parental permission required

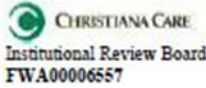
Teen substance use is a growing issue in Delaware. Addressing substance use early, your teen could find hope and guide him or her to a brighter future. Visit [RehabCenter.net](http://RehabCenter.net) for assistance on finding addiction treatment for teens living in Delaware.

\* Medicaid Accepted

RehabCenter.net. (2019). Teen alcohol and drug rehab centers in Delaware. Retrieved from <https://www.rehabcenter.net/teen-rehab-centers/delaware-teen-rehab-centers/>

## Appendix H

### IRB APPROVAL FROM CHRISTIANACARE



Helen F. Graham Cancer Center & Research Institute  
West Pavilion - Suite 2350  
4701 Ogletown Stanton Road  
Newark, DE 19713


302-623-4983 phone  
302-623-4989 phone  
302-623-6863 fax

#### MEMORANDUM

Steven Kushner, MD  
Chairman, IRB #1  
Gary Johnson, PhD  
Chairman, IRB #2  
Jerry Castellano, Pharm.D, CIP  
Corporate Director  
Heidi Derr, BA, CIP  
IRB Regulatory Affairs/Auditor  
Sonia Martinez-Colon  
Executive Assistant  
Wendy Bassett  
Administrative Assistant  
Lee McCormick  
Administrative Assistant

**DATE:** July 30, 2019

**TO:** Lauren Brooking, BSN, RN, CEN  
Nursing Research  
Christiana Hospital

**FROM:** Sonia Martinez-Colon 

**RE:** CCC# 39107 - Practice Change Project for DNP Program:  
(DDD# 604407)

This is to officially inform you that your protocol was approved by Expedited Review per 45 CFR 46.110(f)(5)(7) with an Alteration of Consent 45 CFR 46.116(d), by Jerry Castellano, Pharm.D, CIP, Corporate Director of Christiana Care Health System Institutional Review Board (IRB00000480), on 07/30/2019. Approval was granted for a period of one year, from 07/30/2019 through 07/29/2020.

The above stated CCC# (Christiana Care Corporation number) has been assigned to your research. That number, along with the title of your study, must be used in all communication with the IRB Office.

Changes in this protocol after the initial approval may not be initiated without Institutional Review Board review and approval, except where necessary to eliminate apparent immediate hazards to the human subject. Also, if you encounter any adverse effects or deaths that must be reported to the company and the FDA, the committee must be so informed immediately by phone.

In addition, a periodic review of this protocol will be conducted in six months to a year from the above approval date. At that time, you will be required to complete a review form with all available information collected to date on your protocol.

A final requirement is that you notify the Institutional Review Board when this protocol is completed, and all results are to be summarized for the committee's review.

If you have any questions, please contact the IRB Office.

*This approval verifies that the IRB operates in accordance with applicable ICH, federal, local and institutional regulations, and with all GCP Guidelines that govern institutional IRB operation.*

## Appendix I

### IRB APPROVAL FROM UNIVERSITY OF DELAWARE



Institutional Review Board  
210H Hullihen Hall  
Newark, DE 19716  
Phone: 302-831-2137  
Fax: 302-831-2828

DATE: September 4, 2019  
TO: Lauren Brooking  
FROM: University of Delaware IRB  
STUDY TITLE: [1477993-1] Screening for Substance Use in the Adolescent Population  
SUBMISSION TYPE: New Submission  
ACTION: NOT HUMAN SUBJECTS RESEARCH DETERMINATION- PRACTICE CHANGE  
DECISION DATE: September 4, 2019

Thank you for your New Project submission to the University of Delaware Institutional Review Board (UD IRB). According to federal regulations, this project does not meet the definition of human subject research under the purview of the IRB.

The following definitions were used in making the NOT HUMAN SUBJECTS RESEARCH determination:

- **Research** means a systematic investigation, including research development, testing, and evaluation, designed to develop or contribute to generalizable knowledge.
- **Human subject** means a living individual about whom an investigator (whether professional or student) conducting research: (i) Obtains information or biospecimens through intervention or interaction with the individual, and uses, studies, or analyzes the information or biospecimens; or (ii) Obtains, uses, studies, analyzes, or generates identifiable private information or identifiable biospecimens.

No further action with the IRB Office is required at this time. Please consult with our office if any major changes to the reviewed project, relevant to the definitions above, were to be proposed.

A copy of this correspondence will be kept on file by our office. If you have any questions, please contact the UD IRB Office at (302) 831-2137 or via email at [hsrb-research@udel.edu](mailto:hsrb-research@udel.edu). Please include the study title and reference number in all correspondence with this office.

**INSTITUTIONAL REVIEW BOARD**

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## Appendix J

### FLOW DIAGRAM TO ASSIST NURSES IN ROLE OF PROJECT

Staff nurse will tell eligible adolescent and parent(s): “We screen all adolescents between the ages of 14 to 21 years for risky behavior as this is an important aspect of managing health and preventing substance use.”



Staff nurse hands CRAFFT tool (found in Appendix A) to adolescent that will be self-administered and hands the referral to treatment handout to the parent at this time.



Asks the parent to step outside the room and will call the parent back after the screening has been completed.



Upon completion of the CRAFFT, the staff nurse will score the questionnaire



1. CRAFFT score 0 → No intervention required (Can give appraisal for good behavior)
2. CRAFFT score 1 → Staff nurse provides brief intervention (Examples listed in Appendix F)
3. CRAFFT score 2 or greater → Staff nurse provides discussion for the resources on the referral to treatment handout (found in Appendix G) and discusses options with the adolescent. The staff nurse will encourage parental involvement for those under the age of 18 years and receive consent from the adolescent to include parent(s) in patient care. If adolescent consents to parental involvement – all educated on health risks associated with behavior and resources on referrals to treatment options. DFES will reinforce education and follow-up care. If adolescent does not consent to parental involvement, the discussion on health risks and resources to referrals to treatment will be between the nurse and adolescent while parents are out of the treatment room and DFES will not reinforce education. Project Engage can assist with referrals to treatment for patients 18 years and older.



Staff nurse will complete form found in Appendix J and staple completed CRAFFT screening tool.



Will place this form in the secure location provided in the ED core for the DNP project leader to collect weekly.

**Appendix K**

**FORM COMPLETED BY NURSING STAFF**

1. Date: \_\_\_\_\_ Time \_\_\_\_\_
2. Was the SBIRT model implemented with the CRAFFT screening tool on the eligible adolescent? YES \_\_\_ NO \_\_\_
3. If this was not performed, what was the reasoning why?
  - a. \_\_\_\_\_  
\_\_\_\_\_
4. If this was performed, what was the adolescents:
5. AGE: \_\_\_\_\_
6. GENDER: Male \_\_\_ Female \_\_\_
7. CRAFFT score: \_\_\_\_\_
8. Intervention completed based on the CRAFFT score
  - a. No intervention required but still provided referral to treatment handout  
\_\_\_\_\_
  - b. Brief intervention with the referral to treatment handout \_\_\_\_\_
  - c. Staff nurse discussed health risks associated with behavior and resources on referral to treatment handout \_\_\_\_\_
  - d. Adolescent under 18 years of age consented to parental involvement with care
    - i. YES \_\_\_ NO \_\_\_

e. DFES Attending reinforced education on health risks and resources to referrals to treatment for adolescents consenting to parental involvement

\_\_\_\_\_

f. Was Project Engage consulted for those individuals 18 years and older? \_\_\_

