2013

Implementation of Smoking Cessation Education Program in the Emergency Department

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IMPLEMENTATION OF SMOKING CESSATION EDUCATION PROGRAM IN THE EMERGENCY DEPARTMENT

CAPSTONE PROJECT

Presented in Partial Fulfillment of the

Requirements for the Degree of

Doctor of Nursing Practice

Barry University

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by

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Abstract

Background: Cigarette smoking is the leading cause of preventable death in the United States. According to the National Institute on Drug Abuse (NIDA, 2011), from 1964 to 2004, cigarettes caused about 12 million deaths in the United States. The Centers for Disease Control and Prevention (CDC, 2011) stated that one out of five deaths can be attributed to tobacco-related products.

Purpose: The purpose of this project was to increase smoking cessation education and referral completed by registered nurses for at-risk patients being discharged from the emergency department.

Theoretical Framework: The theoretical framework utilized in this project was Donabedian's Healthcare Outcome Measurement Model. Donabedian's three areas of framework—structure, process, and outcome—are closely related to each other. Structure has an impact on process, and consequently, process affects outcome. All three areas are considered important in quality of care evaluation.

Methods: The method utilized for this project was a pre- and post-intervention self-reported confidential survey with an educational implementation.

Results: After implementing the education intervention, the pre- and post-education survey data were compared. According to the surveys, the number of nurses who screened for tobacco use most of the time remained the same in the pre and post surveys. The number of nurses who advised, assisted, and referred patients once they screened positive for tobacco use increased from rarely in the pre survey to some times and most of the time in the post survey.

Conclusion: In conclusion, smoking cessation is one of the leading risk factors for the development of heart disease, stroke, cancers, and lung problems. Through the use of smoking cessation education and referral nurses, can help reduce the morbidity and mortality secondary to these diseases. Nurses, being the largest group of health care providers in the hospital, play a pivotal role in educating and referring individuals who smoke tobacco.

ACKNOWLEDGMENTS

I would like to acknowledge my chairperson Dr. Carolyn LePage and committee members Dr. Mary Colvin and Dr. Jessie Colin for supporting and guiding me through this process. I would also like to express my gratitude to my mentor Dr. Johis Ortega for sharing his wisdom and nursing experience with me. I would like to give a special thanks to Diane Amado Tate, AVP, and Shakira Henderson, nurse researcher of the hospital site, for allowing me to implement this program in the emergency department. Also, thank you to Silvia Clark, ED clinician, for her support and to Barbara Carpenter, editor, for her wonderful feedback. Last but not least, I would like to give thanks to my dear wife, Melissa Rodriguez, for being my rock. Thank you for your help and encouragement during the countless hours spent working on this project. I could not have done it without you, not even this acknowledgement!

DEDICATION

This project is dedicated to my grandmother Miriam Benito, my mother Amelia Jimenez, and my father Juan M Gonzalez who have all been victims of nicotine addiction and, consequently, experienced detrimental effects to their health.

TABLE OF CONTENTS

LIST OF FIGURES

CHAPTER ONE

INTRODUCTION TO STUDY

Background of Problem

Cigarette smoking is the leading cause of preventable death in the United States. According to the National Institute on Drug Abuse (NIDA, 2011), from 1964 to 2004, cigarettes caused about 12 million deaths in the United States. The Centers for Disease Control and Prevention (CDC, 2011) stated that one out of five deaths can be attributed to tobacco-related products and about 8.6 million individuals are suffering from tobacco-related diseases such as chronic obstructive pulmonary disease (COPD) and bladder, oral, throat, esophageal and stomach cancer. More deaths are caused by tobacco use than HIV, motor vehicle accidents, murders, illegal drug use, alcohol use, and suicides combined (CDC, 2011). Tobacco not only is harmful to the individual using the drug but also to those near the smoker. Secondhand smoke affects about 126 million Americans each year. Of those, about 50,000will die of second hand exposure to smoke (CDC, 2011).

According to the American Lung Association (2012), Centers for Disease Control (2011) and Healthy People (2012) the leading cause of chronic obstructive pulmonary disease (COPD) is smoking cigarettes, which accounts for 90% of the diagnosed cases. COPD is the fourth leading cause of death, costing the United States directly and indirectly roughly $193 billion every year (ALA 2012; CDC, 2011; Healthy People, 2012). The most cost-effective and efficient way of preventing and treating COPD is through smoking cessation education and counseling. Healthy People is a set of 10-year

goals and objectives with the purpose of improving the health of all Americans. Part of the initiative of Healthy People 2020 is to decrease the number of individuals who smoke (2012). According to this initiative by the US Department of Health and Human Services, every encounter with individuals who smoke is an opportunity for smoking cessation intervention (Healthy People, 2012). This initiative is a continuation from Healthy People 2010. Furthermore, Healthy People cited that individuals who quit smoking early have a reduced chance of developing disease and experiencing premature death. Although the benefits of quitting are greater at an early age, quitting smoking is beneficial at any age (ALA, 2012; Healthy People, 2012).

Research has shown that for smoking cessation education to be effective, it does not have to be lengthy (Healthy People, 2012). Brief, frequent sessions of counseling are very effective in increasing smoking cessation rates (Healthy People, 2012). In the current hospital setting, smoking cessation education practices typically take place once the patient is admitted and in many instances if the diagnosis can be linked to the use of tobacco such as pneumonia or right-sided heart failure. Much of this education is completed either by nurses who work on respiratory floors or by respiratory therapists because patients are more likely to be admitted to pulmonary units.

When patients come to the emergency department with a sprained ankle, for example, the assessment and interventions performed by nurses and physicians are focused on the problem, which is the ankle. If this patient happened to be a smoker, little would be done regarding health promotion and disease prevention through smoking cessation education primarily because the chief complaint is not lung related. Although

nurses in the Emergency Department engage in screening for tobacco use during triage, smoking cessation education is rarely implemented before discharged home.

The benefits of smoking cessation have been well studied and established by the scientific community. According to the CDC (2012), patients are two to four times more likely to have heart disease, which is the number one cause of death in the United States, if they smoke cigarettes. The organization also noted that smoking cessation has shown to decrease the chances of a myocardial infarction by 25-30%. Furthermore, smoking cessation has shown to decrease the chances of a stroke, another leading cause of death and disability in the United States, by 30% (CDC, 2012). Studies demonstrate a drop in the number of COPD exacerbation in individuals who quit smoking, when compared to those who do not (Au et al., 2009; CDC, 2012). Individuals who smoke have a greater chance of developing cancer in the lung, throat, tongue, esophagus, stomach, and bladder, further supporting the importance of smoking cessation (CDC, 2012).

Numerous interventions can be implemented in the clinical setting to assist patients to quit smoking such as healthcare provider advice to quit, the use of pharmacological agents such as nicotine replacement therapy, and antidepressants. The use of behavioral interventions and referral programs are effective and less invasive than pharmacological agents (Hilberink, Jacobs, Bottema, Vries, & Grol, 2005). Overall, a combination therapy is likely to be effective (Hilberink et al., 2005).

The U.S. Preventive Services Task Force (USPSTF, 2009) recommends that all individuals are screened for tobacco use and a brief intervention is implemented to assist

with smoking cessation in addition to pharmacotherapy (2009). The organization utilizes the five As approach, which includes: (a) ask about tobacco use, (b) advice to quit (c) assess willingness to quit, (d) assist to quit, and (e) arrange follow-up. According to the Substance Abuse and Mental Health Services Administration (SAMHSA, 2012), Screening, Brief Intervention, and Referral to Treatment (SBIRT) is a program developed to achieve early intervention and treatment services for individuals with substance use disorders. This approach is consistent with the five As recommended by the USPSTF. It is a comprehensive program that has an impact on the community, identifying individuals who are currently using different substances such as tobacco and alcohol to initiate interventions prior to the development of medical problems as a result of substance use (SAMHSA, 2012). Despite all the research demonstrating the negative effects of tobacco use on individuals' health, 23% of the population in the U.S. still smokes tobacco, and about 2,000 teenagers become smokers daily (SAMSHA, 2012). Of the smoking population, according to Fiory et al. (2000) about 70% of smokers see a medical provider yearly, including visits to the emergency department (ED). With the scarcity of primary care due to lack of health insurance and providers, the number of emergency room visits for primary care has increased steadily through the years. This high percentage of smokers being evaluated annually provides health clinicians, including those in the emergency department, with the opportunities to implement programs such as SBIRT. This screening process quickly assesses the severity of substance use and guides the correct intervention for the patient. Part of the brief intervention is to increase awareness

among the substance user, which consequently helps motivate behavioral change (SAMHSA, 2012).

Problem Statement

The problem is that there is a lack of smoking cessation education completed by registered nurses for at-risk patients discharged from the emergency department.

Purpose of the Project

The purpose of this project was to increase smoking cessation education and referral completed by registered nurses for at-risk patients being discharged from the emergency department.

Theoretical Framework

Avedis Donabedian is well-known for his contribution to quality assessment and improvement of healthcare. A 1966 article published in the Milbank Memorial Fund Quarterly- and republished in 2005 by the same journal- described Donabedian's classification of methods for Quality Assessment: structure-process-outcome (Donabedian, 2005). Dedicating the remainder of his professional life to improve health services research and quality, his article is considered a classic used by many researchers in the hospital setting (Sunol, 2000). This Capstone project was guided by the scientific underpinnings of Donabedian.

Donabedian's three areas of framework-structure, process, and outcome- are closely related to each other. Structure has an impact on process, and consequently, process affects outcome. All three areas are considered important in quality of care

evaluation. Donabedian (2005) defines *process* as "not interested to apply medical technology to achieve results, but in whether what is now known to be good medical care has been applied" (p. 694). According to Donabedian, the application of good medical care is not solely based on the outcome. Judgment of process is based on factors such as complete medical history, appropriate information obtained, medical testing, continuity of care, evidence of health promotion, and disease prevention (Donabedian, 2005). In short, with the use of this process, the investigator can assess if nursing has been practiced properly. He next defines *structure* as "the setting in which it takes place and the instrumentalities of which it is the product" (Donabedian, 2005, 694-695). He stated that if the proper setting and right instruments are used, quality medical care will follow(Donabedian, 2005). Finally, Donabedian (2005) defined *outcome* "in terms of recovery, restoration of function and of survival," which is used as an indicator of quality medical care (693).

In this project, *structure* was considered the emergency room registered nurses who have been equipped with smoking cessation education. Part of the structure was the emergency department where the smoking cessation education took place. *Process* was the teaching intervention performed by the investigator to increase smoking cessation education, health promotion, and disease prevention for emergency department nurses. The *outcome* expected was an increased percent of nurses providing smoking cessation education and referral to patients before discharge home. Donabedian's theoretical framework is a linear process. By using a funnel-like cone in the theoretical model, the investigator can represent how these three components (structure, process, and outcome)

are associated with each other and funnel down in a linear manner to accomplish immediate and long-term outcomes.

Through this project, the investigator impacted the policies and procedures that currently exist pertaining to smoking cessation education performed before discharge from the emergency department. The long-term goal was to increase and maintain the health promotion and disease prevention role of the ED nurses, decrease mortality and morbidity secondary to tobacco use, and statistically decrease healthcare cost. The theoretical model was adapted to fit the needs of this clinical project.

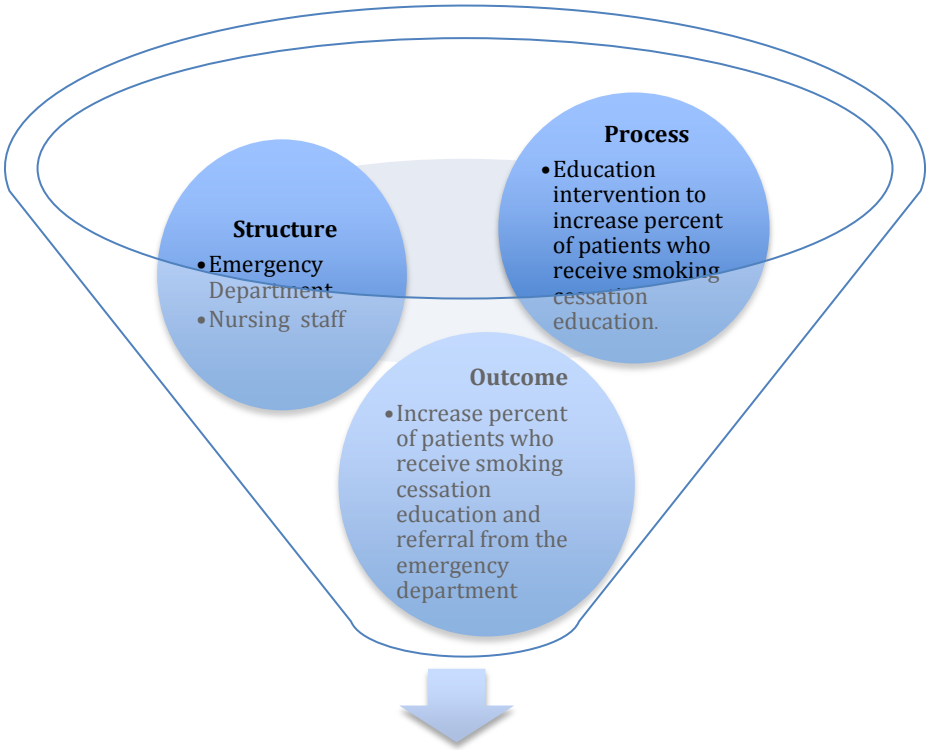

Figure 1. Adaptation of Donabedian's theoretical model for implementation of a smoking cessation program in the emergency department (Gonzalez, 2013).

Project Objectives

The following were the project objectives. The first objective was to *identify key stakeholders*. Once these stakeholders were identified, they were contacted to present them with information pertaining to the project and the benefits to the hospital,

community, and the nursing profession as a whole. Possible stakeholders identified included Chief Nursing Officer (CNO), Director of ED, Nurse Manager of ED, ED Nurse Clinician, and ED staff. Their approval was necessary to carry out the project in the hospital setting and pilot the intervention with the nursing staff. The second objective was *to conduct a self-reported anonymous survey* that assessed the percent and frequency of nurses who screen for tobacco use during triage and initiate any smoking cessation education or referral prior to educational program. The third objective was *to implement an education program* with the staff to increase smoking cessation education and referral from the emergency department. The final objective was *to evaluate the educational program outcomes*, which was achieved through the collection of a second self-reported, anonymous survey assessing the percent and frequency of nurses who screened for tobacco use and provided smoking cessation education and referral. The post-education survey was provided two weeks after implementing the educational program in the ED.

Research Project Questions

1. What are the percent and frequency of nurses who currently provide tobacco use screening during triage?
2. What are the percent and frequency of nurses who provide smoking cessation interventions or referral once clients screen positive for tobacco use?

3. What is the impact of an educational program on the number of screens for tobacco use, counseling, and referral after clients screen positive during triage?

Significance of the Study

Nursing Practice

This project had a significant impact on *nursing practice* by increasing the number of nurses who engage in smoking cessation education and referral from the ED. Nurses are the cornerstones of our current healthcare system. With more than 3.1 million nurses in the United States, there are vast opportunities to reach out to the population of smokers (ANA, 2011). By allowing nurses to engage more actively in the process of health promotion and disease prevention, the needs of the community are met by increasing the quality, continuity, access and cost-effectiveness of the current care provided in the Emergency Department. Furthermore, providing the tools and the appropriate training to Emergency Department nurses to engage in routine smoking cessation education allowed them to practice to their full scope of practice.

Nurses are in the forefront of the healthcare system. Besides patient advocacy, health promotion and disease prevention separate the nursing profession from other healthcare providers. Nurses in the emergency department have the opportunity to reach out and teach many individuals from different social classes and with diverse medical conditions about the importance of smoking cessation. In many instances, underserved patients do not have the resources to see a primary care provider and depend on the emergency departments to meet many of their healthcare needs. This requires healthcare

providers to take a more proactive role in disease prevention and health promotion including education in all settings. This project was significant to nursing because it empowered nurses to increase smoking cessation education before patients are discharged home from the emergency department.

While nurses in the emergency department receive continuous training about different life threatening conditions, health promotion and disease prevention through smoking cessation education have not been a priority. Although research has demonstrated over and over again that smoking is one of the leading risk factors for the development of heart disease, stroke, lung disease, and many forms of cancers, nurses in this emergency department had shifted their focus from the prevention aspect to the acute treatment of these diseases. As our country healthcare paradigm shifts, so has the way that nurses currently practice in this emergency department. Through the implementation of this project, nurses in the ED were equipped with the necessary tools to adhere to these changes that our healthcare faces.

One of the greatest responsibilities of being a registered nurse is that of health promotion and disease prevention through education. Many nurses are not properly trained in the process of smoking cessation education or in the different resources available to them to assist patients to quit tobacco use. In a study conducted by Wong and Stokes (2011), the preparation for nurses at the undergraduate level to teach about smoking cessation was inadequate. They found that the education given by many nursing schools about smoking cessation to their students was fragmented and did not meet the needs of the community. The importance of smoking cessation education cannot be

overstated and, as a profession trusted by the community, it is our responsibility to guide and facilitate patients' recovery. Patients who smoke have a significantly improved quality and quantity of life after they quit smoking (ALA, 2012; CDC, 2012). The amount of money spent every year as a result of tobacco use is approximately 196 billion dollars annually and the number of resources utilized due to chronic disease continue to increase as our population ages (ALA, 2012; CDC, 2012). Rather than responding to the effects of a disease process, nurses should be focusing on ways to prevent them. Diseases like chronic obstructive pulmonary disease, stroke, heart disease, and different forms of cancer are all greatly influenced by tobacco use and are decreased with the cessation of smoking.

Healthcare Delivery

This project had an impact on healthcare delivery by increasing the nurse's focus on health promotion and disease prevention in an acute setting. There is no doubt that prevention is the most cost-effective treatment for many diseases (Pender, Murdaugh, & Parsons, 2006). If prevention is not possible, then early intervention has been said to have a great deal of success decreasing morbidity and mortality secondary to diseases (Pender et al., 2006). Early intervention is no different for smoking. Health promotion and disease prevention should also be part of the care provided in the hospital by nurses. It allows individuals to have continuity of care and live longer, healthier lives. In the United States, a very different approach is currently being used. A reactive approach is taken rather than a proactive one. In the emergency department, patients come in with different complaints, and the focus of the treatments provided is on the complaints, with

little attention to other red flags such as uncontrolled hypertension, poor body habitus, hypercholesterolemia, unsafe sex practices, driving without seatbelt, and substance abuse. These red flags presented could indicate the development of a life-threatening disease in the future, costing our current system a great deal. With the implementation of this project, nurses are able to help decrease the number of patients who currently smoke, consequently helping decrease the number of cases of COPD, heart disease, and numerous forms of cancers.

Healthcare Outcomes

This project had an impact on healthcare outcomes as more screened individuals may choose to decrease or stop smoking after being educated and referred by ED nurses. Consequently, this may potentially decrease the mortality and morbidity related to tobacco use and increase the longevity of our community. Although increased longevity can be seen as a potential cause of increased cost, the number of clients with disabilities who require acute care treatment as a result of tobacco related diseases may decrease. This, as a result, may reduce the overall cost of healthcare.

Healthcare Policy

One of the goals of this project was to change the current policies pertaining to smoking cessation education in the emergency department. Although screening is taught to nurses during triage training, this process was taken a step further. Smoking cessation education implemented by nurses is becoming part of the current ED protocols after the implementation of this project. The findings of this pilot project are changing the healthcare policy in this institution. With these changes in the emergency department,

nurses are allowed to participate more actively in the process of smoking cessation education. Starting with smoking cessation, this trend may eventually evolve to cover other areas such as condom use, the importance of seatbelts and helmets, alcohol use, illegal drug use, and healthy diets.

Correlation to Doctor of Nursing Practice Essentials

This capstone project was linked to the eight doctor of nursing practice (DNP) essentials described by the American Association of Colleges of Nursing (AACN) in 2006. The first essential describes the importance of a scientific underpinning for practice. By translating research studies about smoking tobacco, chronic diseases, smoking cessation education, and referral into the clinical area, this project was linked to the first essential, consequently decreasing the current gap that exists between research and practice.

The DNP essential number two describes organizational and systems leadership for quality improvement and systems thinking. This project was linked to the second essential by potentially changing policies in the emergency department about smoking cessation screening and referral. This will further help meet the needs of the community that it serves and improve the quality of the care delivered by ED nurses. The investigator evaluated the program implemented to ensure that patient care safety is maintained while the number of clients who received smoking cessation education and referral increases.

Essential number three was very much linked to this research project. Clinical scholarship and analytical methods for evidence-based practice is the cornerstone of this

DNP project. Research and practice are interconnected with each other. One cannot exist without the other. Research helps to shape practice, and practice then helps shape research. The discovery of knowledge by research studies is not complete until it is translated into practice and disseminated throughout the scientific community. This project was associated with essential number three by implementing findings from evidence-based research studies to the clinical setting. Furthermore, the findings of this research application will be disseminated in different nursing research conferences through posters and article presentations.

Information systems/technology and patient care technology for the improvement and transformation of health care is the fourth essential described by the AACN (2006). This project was directly associated with this essential because the investigator used technology to collect and analyze the data to further disseminate knowledge and improve quality of care provided. Furthermore, consumer health information from various peer-reviewed articles was evaluated and translated into clinical practice improving the care provided by nurses in the emergency department. Technology was utilized to present the findings of the project once it was implemented and the data collection occurred. Essential number five is health care policy for advocacy in health care. During this project, one of the goals was to stimulate change to the policy in the emergency department, consequently improving nursing practice and improve healthcare delivery and outcome. Previously, during triage, some nurses screened for tobacco use, but rarely performed any intervention once the clients screened positive. With this project, the investigator changed current practice by making changes to the process of tobacco

screening and smoking cessation interventions during triage and the emergency stay.

In a rapidly evolving healthcare world and with new information surging in at a very fast pace, the importance of interdisciplinary collaboration cannot be overstated. DNP essential number six describes interprofessional collaboration for improving patient and population health outcomes. During this project, the nurse investigator worked in direct collaboration with different specialties within nursing and outside the nursing profession. Nurse managers, supervisors, staff, and case managers were involved indirectly with this project. Furthermore, social workers assisted in the allocation of resources for patients who screened positive for tobacco use, and respiratory therapist also assisted with smoking cessation education and care of individuals with respiratory complaints such as COPD, asthma, and pneumonia.

One of the most essential and vital roles of the nurse is that of health promotion and disease prevention. DNP essential number seven describes clinical prevention and population health for improving the nation's health. The backbone of this DNP project was that of health promotion and disease prevention. The CDC (2011) has described smoking cessation as the number one form of preventable death in the United States with one out of five deaths attributed to tobacco-related products. Tobacco use increases the chances of developing heart disease, cancer, stroke, and COPD, which are the first, second, third, and fourth leading causes of death in America respectively (CDC, 2011). Through the implementation of this Capstone project one of the goals was to increase smoking cessation education and referral performed in the emergency department by nurses, further helping to meet the goals of Healthy People and improving the health

status of our nation.

DNP essential number eight is advance nursing practice. During this project, the investigator implemented and evaluated a smoking cessation program based on nursing science and information obtained from Area Health Education Centers (AHEC, 2013), American Lung Association (ALA, 2012), and Centers for Disease Control (CDC, 2012). Advanced level of clinical judgment was demonstrated with the translation of research studies to improve quality of healthcare delivery. The project was implemented as the DNP student was serving as a mentor and guide to the nursing staff in the hospital setting.

Chapter Summary

Cigarette smoking is the leading cause of preventable death in the United States. According to the Centers for Disease Control and Prevention (2011) and the American Lung Association (2012), smoking tobacco is the leading cause of chronic obstructive pulmonary disease (COPD). COPD is the fourth leading cause of death in the United States, costing about $192 billion dollars each year (ALA, 2012). Smoking cessation education has been established as the most cost-effective and efficient way of treating and preventing COPD. Nurses in the emergency department, although engaged regularly in tobacco use screening, do not normally implement any interventions after smoking status had been established. Many of the reasons stated in the literature for this lack of intervention are limited time, knowledge deficit regarding the resources available, and an inability to understand the potential impact of even brief smoking cessation interventions with each encounter. One of the goals set by Healthy People 2020 is to decrease tobacco

use by making each encounter with patients an opportunity to encourage smoking cessation.

The purpose of this project was to increase the number of nurses who engaged in smoking cessation education with patients who were being discharged from the emergency department. Through the implementation of this clinical project, the investigator had an impact on the nursing practice, healthcare outcomes, delivery, and policies. Nursing practice was affected by allowing nurses to engage more actively in the process of smoking cessation education before patients are discharged from the emergency department. Healthcare delivery and healthcare outcomes have been impacted as well. Simply by changing the current healthcare approach from reactive to proactive, mortality and morbidity related to smoking cigarettes can be decreased significantly. Furthermore, the application of this project may have had an impact on healthcare policy by making health promotion and disease prevention through education of patients a priority even in acute settings such as the emergency department.

CHAPTER TWO

REVIEW OF THE LITERATURE

Introduction to the Literature Review

This project centered on the lack of smoking cessation teaching to patients discharged from the emergency department. When patients are admitted to the hospital, smoking cessation education is provided as part of core measure requirements. This, however, is not the case when patients are cared for solely in the emergency department. The purpose of this project was to measure the percent of nurses who provide smoking cessation screening during triage and to determine the percent that provide smoking cessation counseling and education before discharged from the emergency department. After performing a self-reported anonymous survey with the nurses, the principal investigator was able to assess the percent and frequency of nurses who provided tobacco use screening and smoking cessation education/referral. Once this number was established, a teaching plan was developed to increase smoking cessation education and referral after smoking status was established with patients.

According to the U.S Department of Health and Human Services (USDHHS, 2009), tobacco use kills about 430,000 Americans yearly, contributing to roughly 20% of all deaths. The current prevalence of smoking-related death is likely due to multiple factors. The addictive properties of nicotine and the reluctance of providers to be fully committed to tobacco control are some of the factors well studied (USDHHS, 2009). Because emergency departments see 115 million individuals yearly, including 85 million

patients ages 15 and older, initiating smoking cessation interventions from this point is imperative (Pitts, Niska, Xu, & Burt, 2008). A study by Lowenstein et al. reported that the emergency department has shown to have up to 48% of patients who smoke, which is significantly higher than the average seen nationally (Lowenstein et al., 1998). With this high number of possible clients using tobacco, even if the intervention initiated in the emergency department resulted in a 1% smoking cessation decrease, it would translate into 200,000 fewer smokers every year as a result of the intervention (Pitts, Niska, Xu, & Burt, 2008).

The dangers of using tobacco cannot be stressed enough. There are about 7,000 different compounds and gases in cigarette smoke, with the top three with the greatest toxic effect being nicotine, carbon monoxide, and tar (BeTobaccofree.gov, 2013). Nicotine, when ingested, causes the release of dopamine, giving it addictive properties. Carbon monoxide has a greater affinity to hemoglobin. It attaches itself to hemoglobin 200 times easier when competing with oxygen, impairing oxygen delivery to cells in the body. Tar is a sticky black substance that adheres to the lining of the lungs, impairing proper functioning of the cilia (BeTobaccofree.gov, 2013).

Research has demonstrated the importance of smoking cessation education and referral by registered nurses, even for brief periods of time during an emergency room visit (Bryant, 2008; Merrill, Gagon, Harmon, & Milovic, 2010; Pender et al., 2006; Sarna et al., 2009; Svavarsdottir & Hallgrimsdottir, 2008; USDHHS, 2009). The link between smoking tobacco and lung disease has been studied thoroughly and supported by many

scientists in the healthcare arena. Several studies have been published indicating the effects of smoking tobacco in the progressive decline of lung function and the development of respiratory symptoms.

In a cohort study by Au et al. (2009), with 23,791 participants, a link was found between smoking and COPD exacerbations. According to the researchers, smoking cessation is considered the most effective therapy for COPD and is linked to a decrease in symptoms such as sputum production, cough, and dyspnea. Also, smoking cessation clearly has shown to decrease the rate of lung tissue loss. The purpose of this study was to evaluate if smoking and the duration of abstinence from smoking tobacco is linked to COPD exacerbations. Participants were divided in three groups: smokers, former smokers, or never smokers. Additionally, they were divided by how long they smoked, how long since they had stopped smoking, and the number of cigarettes per day they currently smoked or did in the past. Time from quitting was stratified in 1 to 5 years, 5 to 10 years, and greater than 10 years. The number of cigarettes smoked was grouped in increments of 10 to a maximum of greater than 40 cigarettes per day. In this study, 8,067 individuals reported being smokers and 15,904 former smokers. The findings of the study were that smokers have a greater chance of having COPD exacerbations and other respiratory symptoms, while smoking abstinence reduced lung loss and the mortality rate. Participants who had stopped smoking for greater than 10 years had a lower mean number of beta2 adrenergic agonist, anticholinergics, and steroids, when compared to individuals who were still smoking. During the study's follow-up, there were 1,931

exacerbations at a median day 277. When compared to current smokers, former smokers had a significantly lower rate of exacerbations. "The duration of smoking cessation was strongly associated with an inverse U-shaped distribution of risk for COPD exacerbation when compared to current smokers" (Au et al., 2009, p. 460). The rate of exacerbation in the study was described as health risk (HR). A number was assigned depending on the rate of exacerbations. This number was referred to as the health risk. The higher the number, the greater the health risk. Less than a year from quitting, a HR of 1.35 was seen with a 95% confidence. From 1 to 5 years, the HR was 1.26, also with a 95% confidence. The HR from 5 to 10 years was 1.0 and greater than 10 years, HR was 0.66 with a confidence of 95%. The greatest decrease of COPD exacerbation was seen in individuals with more than 10 years since smoking cessation. Based on this study, it is recommended that healthcare providers place emphasis on smoking cessation education considering strong evidence on the effects of smoking tobacco and the development of COPD. Within this same study, smoking cessation was linked to decreased exacerbations and symptoms such as sputum production and cough.

Similar results were obtained from a meta-analysis conducted by Forey, Thornton, and Lee (2011). The researchers completed a systematic review of 218 articles with the purpose of linking smoking tobacco to the development of COPD. A strong link was found between smoking tobacco and the relative risk of developing COPD. With this meta-analysis, the evidence supporting the link between tobacco smoke and lung disease

is greater, allowing for the translation of this knowledge into clinical practice (Forey et al., 2011).

With improvements in technology, new areas of research have made significant advances. A great example involves a research study by Llumets et al. (2011) where different plasma proteins were used as a marker for COPD development. In this randomized cohort study, the purpose was to find if there was a link between age, smoking, and the development of different surfactant proteins in the lung tissue. During this study, various individuals were used to help assess the effects of tobacco smoke on the Surfactant Protein A (SPA). The study found that this protein increased significantly in the smoking population. The increase of SP-A is associated with the remodeling changes that are seen in chronic obstructive pulmonary disease (Llumets et al., 2011).

Overall, these studies reported similar findings: a strong link between smoking tobacco and the development of pulmonary symptoms and COPD. According to the Centers for Disease Control and Prevention (2012) and the American Lung Association (2012), the most efficient and cost-effective way of preventing COPD development is through smoking cessation. Several studies have been published regarding the need for nurses and other healthcare providers to be more involved in teaching patients about the dangers of tobacco and the importance of quitting.

The following group of research articles focuses on the need for increased smoking cessation counseling, education, and referral

by registered nurses despite existing nurses' use of tobacco screening. The barriers encountered by nurses while providing smoking cessation education are also described in these articles.

During a study by Svavarsdottir and Hallgrimsdottir (2008), an anonymous survey was sent to all the registered nurses of Iceland. Of the 2,453 surveys sent, about 36% (868) were completed and returned. The purpose of the study was to investigate the participation and knowledge of Icelandic nurses in smoking cessation counseling. The researchers wanted to assess the barriers encountered by the nurses while counseling patients about smoking cessation. This study showed how, despite the fact that most nurses engage in tobacco use screening, the majority are not involved in smoking cessation counseling. Over 80% of nurses believed that it was the duty of the nurse to ask and advice about smoking cessation. Despite this belief, the great majority asked about tobacco use, but only 50% reported advising to quit if the clients had respiratory symptoms, and a much lower number was seen if the client presented without any respiratory symptoms (Svavarsdottir & Hallgrimsdottir, 2008). In this study, it was also found that over half of the nurses (55.3%) had never provided any form of smoking cessation counseling or assistance to patients. Furthermore, over 80% stated that they found it easy to ask about smoking status, readiness to quit, and advise against smoking but more difficult to assist them with quitting.

One of the barriers uncovered by this study was lack of time. Of the nurses surveyed, 26.7% reported not having enough time for smoking cessation education at work. Other factors reported were lack of knowledge, insufficient training, and not

considering it part of the job. Regarding advising against smoking, nurses who were current smokers reported a significantly lower frequency of interventions when compared to nurses who did not smoke. These nurses also believed that smoking cessation counseling would not work since many of them had tried in the past without success (Svavarsdottir & Hallgrimsdottir, 2008). During this same study, a small number of nurses strongly agreed that they had enough formal education in school to help them with smoking cessation.

A similar study by Sarna et al. (2009) utilized surveys sent to 35 different magnet hospitals with the purpose of describing the frequency of nurses' delivery of tobacco cessation interventions. A descriptive cross sectional web-based survey was used to assess this frequency. In this study, 26% of facilities had a response rate greater than 15%, resulting in a median response rate of 9.3%. The initial sample included 4,489 nurses, but after removing individuals who did not meet the inclusion criteria, 3,482 nurses were kept in the final sample. From this group, 51.7% had a diploma or associate degree in nursing, 34.2% had a baccalaureate degree and 13% had master's or doctoral education.

This study found that most nurses frequently asked about tobacco use (73%). A lesser number of nurses advised of the dangers of smoking and benefits of smoking cessation (62%), and a minority (37%) always or usually assisted patients with cessation. The percentage of nurses who arranged resources to quit smoking, recommended medications to quit, and referred to outside sources like a quit-line were 19%, 24%, and 22%, respectively. This study also uncovered how nurses working in hospital areas

where smoking rates were high had a significantly greater frequency of smoking cessation interventions. Advanced registered nurse practitioners were more likely to advise clients to quit, arrange for follow-up, and recommend pharmacological agents when compared to other nurses with lower levels of education (Sarna et al., 2009). This finding led to the conclusion that the majority of nurses did not have enough training or education to make the appropriate referral to community resources, use the quit-line, or recommend pharmacotherapy based on the amount of tobacco smoked (Sarna et al., 2009).

The authors also found that nurses who worked in gynecological units and the emergency departments would ask more consistently about tobacco use but were also the units with the least number of interventions to increase smoking cessation in their patients (Sarna et al., 2009). This study demonstrated how the frequency of smoking cessation education done by nurses was suboptimal even when they practiced in facilities that had received Magnet status, a national recognition in nursing excellence (Sarna et al., 2009). This study, like other studies, also showed how nurses who reported being smokers were less likely to advise about smoking cessation and arrange for follow-up with their patients.

Many nurses report that they have not received sufficient training to engage in smoking cessation teaching and others believe that they do not have the time to perform these duties (Svavarsdottir & Hallgrimsdottir, 2008; Merrill et al., 2010). In a study conducted by Wong and Stokes (2011), 12 schools were surveyed in New Zealand. More than half of the schools were found to have inadequate teaching about smoking cessation

in their undergraduate nursing programs. Out of the 12 schools, seven schools had fragmented education for their students about smoking cessation.

In a research conducted by Carpenter, Watson, Raffety, and Chabal (2003), a computer program was utilized to increase staff knowledge about smoking cessation education. This study demonstrated that even a short 45-minute training session could have a significant impact on the willingness of the staff to teach patients about smoking cessation (Carpenter et al., 2003). The current literature demonstrates that, although an important role of nurses is that of health promotion and disease prevention, not having the necessary tools and training to teach about smoking cessation impedes their ability to fulfill certain responsibilities within their scope of practice. Among these research studies, most studies place an emphasis on staff education, not only to increase the knowledge of smoking cessation but also to increase the self-efficacy of nurses. Nurses who are trained in teaching about smoking cessation feel that they are able to have an impact on patients' ability to stop smoking. These nurses not only screen for tobacco use but are also able to use the different resources that are available to patients such as the quit-line, community resources, and pharmacotherapy to assist with cessation and abstinence (Carpenter et al., 2003; Merrill et al., 2010; Sarna et al., 2009; Svavarsdottir & Hallgrimsdottir, 2008).

The USPSTF suggests that all individuals are screened for tobacco use in every visit and a brief intervention implemented to assist with smoking cessation (2009). To assist healthcare providers meet this goal, the organization recommends the use of the

five As approach, which consists of asking about tobacco use, advising to quit, assessing willingness to quit, assisting to quit, and arranging some form of follow-up for the patient. According to the Substance Abuse and Mental Health Services Administration (SAMHSA), Screening, Brief Intervention, and Referral to Treatment (SBIRT) is a program that has been developed to achieve early intervention and treatment services for individuals with substance use disorders (2012). SBIRT is a similar approach to the five As but it allows for the grouping of individuals by risk depending on how much they smoke or use other substances. This further guides the healthcare provider on the approach to take, making the intervention individualized to the needs of each client. According to SMHSA, SBIRT is a comprehensive program that has an impact on the community. During screening, it identifies individuals who are currently using different substances such as tobacco and alcohol to initiate interventions before the clients develop the disease process linked to the substance abused (SAMHSA, 2012). In this project, the focus was smoking cessation.

The Area Health Education Centers (AHEC) partnered with the CDC, Florida Department of Health, Tobacco Free Florida, and U.S Public of Health Service provide a variety of resources for both individuals who smoke and healthcare professionals (2013). Their services range from education to health professional students, practicing professionals, and clients with the desire to quit. AHEC, provides on-site live or online modules to equip healthcare providers with the information and knowledge necessary to conduct smoking cessation education and referral in the clinical setting (AHEC, 2013).

A variety of resources are available for the hospitals and health centers that help with smoking cessation education. These resources include materials and visual aids such as posters, handouts, cards with quit-line information, and contact information to the health centers when patients are ready to quit. Like SBIRT, and USPSTF, AHEC recommends the use of the five As approach with individuals who smoke. Its education information and resources follow the recommendations of the CDC and the U.S. Department of Health and Human Services.

In 2009, The Ministry of Health of New Zealand provided an update to aid healthcare workers to include smoking cessation interventions in their everyday practice. They replaced the five As approach with the ABC approach. The A is to *ask* all people about their smoking status and document it in the medical record. The B is for providing a *brief* advice to quit regardless of the client's desire or willingness to quit. The C is for making an offer, referring to, or providing evidence-based smoking *cessation* treatment. This includes the combination of pharmacological agents such as nicotine replacement therapy and national quit-line free follow up.

Summary

In summary, a variety of research studies and empirical data demonstrate the effects of tobacco use in lung health and other organ systems. There are also several studies indicating how smoking cessation can decrease the number of COPD exacerbations and the development of proteins that destroy lung tissue. Although these

topics are very well studied and documented, nurses are not receiving sufficient education, formally or informally, to take on the task of smoking cessation education. Consequently, new research studies are emerging demonstrating different techniques to prepare nurses and other healthcare providers not only for screening for tobacco use, but also for participating in interventions such as cessation counseling and referral to outside resources. One of the goals of this Capstone project was to increase the amount of education nurses receive about smoking cessation and thereby, increasing their ability to educate and refer patients who smoke tobacco. The different evidenced based studies mentioned above were utilized during this project to expand the nurses' knowledge base about smoking cessation education and referral. The implementation of this project utilizing these research studies further helped narrow the gap that currently exists between nursing research and clinical practice.

CHAPTER THREE

METHODOLOGY

Introduction to Methodology

This chapter will describe and outline the project's purpose, objectives, design, setting, sampling, inclusion and exclusion criteria, and human protection. Furthermore, it will delineate the budget requirements, timeline, and collection and analysis of data.

Project Design

This project utilized a self-reported anonymous survey to assess the frequency and percent of nurses who provide tobacco use screening and cessation education to patients before discharge. After a percentage was established, an education program was implemented teaching about the use of the five As and SBIRT in the emergency department and how to educate and refer patients from the emergency department with the use of resources from AHEC. After the implementation of the educational piece, a second self-reported anonymous survey was completed assessing the percent and frequency of nurses who, once patients screen positive for tobacco use, provided smoking cessation education and referral. Descriptive statistics were used to demonstrate data before and after the project was implemented.

Setting

This project took place in a 19-bed emergency department located in a private hospital in South Florida.

Sampling

The sample for this project was a purposeful convenience sample. Nurses who currently worked in the Emergency Department providing direct patient care participated in this project. A self-reported anonymous survey was provided before and after an educational program was implemented by the investigator. Both surveys pre- and post-implementation of the program helped compare the impact of the educational program in the emergency department. The percent and frequency pre and post program of nurses who provided tobacco use screening and smoking cessation education and referral were compared. Prior to implementing the program, permission was obtained from the Institutional Review Board (IRB) from the study site and Barry University to ensure the protection of human participants.

Inclusion Criteria

This project's sample was limited to emergency department nurses who provide direct patient care in the clinical setting. Nurses who were permanent floaters from the ICU/CCU area also were also included in the study. Permanent floaters were considered nurses who have at least one shift per week in the emergency department, but their main place of employment was on another floor.

Exclusion Criteria

This project excluded healthcare providers such as emergency room technicians, respiratory therapists, physicians, nurse practitioners, physician assistants, unit secretaries, and licensed practical nurses. Also, nurses who were not engaged in direct

patient care such as managers and unit supervisors and nurses who worked for a temporary agency were excluded from the project.

Ethical Considerations

Approval from the IRB from the study site and Barry University was obtained prior to implementation of this project. Self-reported anonymous surveys were utilized to collect the information pre and post educational program implementation. No staff identifying data was collected during the surveys. Surveys were dropped in a box, preventing the investigator from linking the responses to the nurses. All information was kept locked in a cabinet, and electronic data were stored under password security. All data will be destroyed within five years of collection date. The investigator did not have any supervisory role over the staff. Participation in the project was voluntary as this was a pilot program assisting not only with future policy change but also in the identification of barriers met by the nursing staff when implementing smoking cessation education in the ED.

There were minimal risks associated with participation in this project. Nurses participating may have had some anxiety when teaching about smoking cessation to clients if this is the first time they did so. To reduce the risk of this apprehension, project printouts were posted on the computers of the triage nurses and primary nurses to prompt screening for tobacco use and guide education if clients screened positive. The investigator also provided reminders during the first two weeks of project implementation to decrease anxiety and assist with the process. No monetary incentive was provided to participants of the program. A cover letter was provided to the nurses participating in

this project to inform them about the project and its goals. The nurses may have benefitted from this project by having increased knowledge about smoking cessation. Patients who smoked benefitted from this project by receiving smoking cessation counseling and referral to AHEC after the project was implemented.

Implementation Phases and Timeline

Objective 1

To identify key stakeholder. The implementation of this project depended greatly on the support of nursing leaders from South Miami Hospital. The first individual from the hospital who was contacted was the Assistant Vice President Diane Amado Tate. Through the use of electronic mail, a meeting was requested with the AVP of the hospital. During this meeting, the purpose, objectives, and benefits of the project were presented. The importance of the project was also emphasized as well as the need for this intervention within the community. In addition, the investigator stressed the impact that such a nursing driven project may have on future Magnet recertification of the hospital. After contacting the AVP, the nursing director from the ED was contacted via email as well. The nursing research department of South Miami was contacted to discuss the intended project and to gain support during the implementation and development of such project. The nurse manager and the nurse clinician from the ED were also involved increasing the likelihood of participation from the nursing staff. A group meeting was arranged with the nurse manager of the ED and the nurse clinician. A detailed explanation of the project and the need in the community for such an intervention was discussed. The entire process was expected to take about two weeks.

Objective 2

To conduct a self-reported anonymous survey assessing nurses whom during triage, screen for tobacco use and provide smoking cessation education**.** A self-reported anonymous survey was given to the staff prior to an educational program. Participants filled out the survey, which contained questions about their frequency of tobacco use screening during triage and interventions done once the clients screened positive for tobacco use (See Appendix F). The five As approach was used to guide the questions asked during this survey. Nurses dropped the surveys inside a box, preventing the investigator from linking the answers to the staff members. No personal identifiers were collected during this survey. The percent and frequency of nurses who asked about tobacco use, assessed readiness to quit, advised patients to quit, and assisted with and arranged for referral was recorded by the investigator.

Objective 3

To implement an education program with staff. An educational program was implemented with the staff to teach about the use of SBIRT process and the five As approach for patients who screened positive for tobacco use. Although the investigator did not develop SBIRT and the five As approach, the educational program to teach the staff about SBIRT was developed and implemented by the investigator. During a two-hour PowerPoint session, nurses were educated on how to implement the program and the benefits of such interventions. Staff was educated about tobacco use screening and how to flag the client's chart if the client screened positive for tobacco use. When the triage nurse interviewed the patient, he or she asked if the patient was a tobacco user. If the

client answered yes, the chart was flagged in writing in the process screen area. Flagging of the chart by the triage nurse indicated that the patient was a candidate for the brief intervention and referral to AHEC. Furthermore, to assist with the identification of this population who screened positive for tobacco use, the nurse marked the chart in the "to do column," indicating the primary nurse that further intervention was needed with this client in regards of smoking cessation education. Once the nurse was made aware and smoking education and or referral was done accordingly, the sign from the "to do column" was marked off, indicating that the process was completed and no further action was needed. The primary nurse taking care of the client utilized the ASSIST screening tool to categorize the level of intervention needed for this client, from a brief intervention to a more complex intervention requiring pharmacological agents, quit-line referral, and outside counseling services. An AHEC referral form was also provided to patients who were willing or ready to quit. Once this referral form was filled out by patients, it was faxed to AHEC as a referral to their services.

A second portion of the educational phase provided the nurses with information on how to conduct smoking cessation education and how to refer patients from the emergency department. As research shows that nurses are not being trained in schools about this information. The teaching information provided by the investigator to the staff stemmed from the CDC, USPSTF, USDHHS, ALA, and AHEC recommendations and training modules. The staff was trained in how to use the five As approach and what steps to take if patients verbalize readiness to quit after the ASSIST questionnaire had been

used. Also, staff members were provided with information about community resources and referral programs through AHEC.

The implementation of the educational program took place in the emergency department conference area, allowing for groups of 10 nurses from 7 a.m. to 9 a.m. for the day shift and 7 p.m. to 9 p.m. for the night shift. Staff attended teaching sessions on either scheduled days to work, in which coverage was provided by management or during days off. A total of no more than 80 nurses were targeted for this educational project. Due to the volume of individuals who need training, eight sessions were conducted to accommodate different schedules. Half of the sessions were during the morning, and half were during the evening. The training of the staff about the program and implementation after training took four weeks. Overhead projectors and PowerPoint were utilized to assist with the learning process. This program was validated with multiple research studies demonstrating its effectiveness for substances such as alcohol and tobacco. The second part of the implementation took place as the nurses utilized the information learned during the education portion to provide smoking cessation education and referral to clients. During this portion of the project, the investigator provided written reminders posted to the different computers.

Objective 4. To Evaluate Program Through a Second Self-Reported Anonymous Survey

The investigator conducted a second self-reported anonymous survey comparing it to the results of the pre-education survey (see Appendix G). This process took place two weeks after the educational intervention was implemented. Surveys were collected for

one week. The percent and frequency of nurses who screened for tobacco use during triage were recorded. The percent and frequency of nurses who provided smoking cessation education following the five As approach were also recorded. Nurses' frequency of screening during triage, assessing readiness to quit, advising to quit, and assisting in quitting were also recorded during this second survey. Descriptive statistics were utilized to represent an increase percent and frequency of nurses who not only screened for tobacco use but also provided education about smoking cessation**.** The percent of nurses who reported referring patients after the educational program was also recorded. The evaluation process took 3 weeks, allowing time for data collection and proper analysis.

Resources with Proposed Budget

To implement this project, several supplies were needed. The hospital provided for electronic equipment such as computers and overhead projectors, which were needed for the educational portion of the program. The single greatest cost of this study was the hourly pay for the nurses to be away from their unit and relieved of all responsibilities to attend the education portion. Because the hospital was supporting this project, this sum was paid from the emergency department budget. This amount varied depending on the hourly wage of each individual attending the session. Different fees related to the programs used to collect and analyze data, including Microsoft Word, Excel, and PowerPoint, totaled approximately $400. This amount also included copying fees. Other fees included the payment of an editor for about 8 hours at an hourly rate of $30, totaling $240. The room where the educational program took place was not added to the budget

because the conference room, which is an area in the emergency department, accommodated for each group of participants and had capabilities for a projector. The total estimated budget requirement was $640.

Evidence of Site Support

Site support to implement this project was provided by Assistant Vice President Diane Amado-Tate MSN, RN (Appendix D).

Project Objectives with Outcome Measures

The project objectives were:

1. To identify key stakeholders such as chief nursing office, ED nursing director, nurse researcher for the hospital, and nurse manager and nurse clinician for the ED.
2. To conduct a self-reported anonymous survey to assess the percent and frequency of nurses who, during triage, screened for tobacco use and provided any smoking cessation education or referral.
3. To implement an education program with the staff developed by the investigator about SBIRT, AHEC and the five As approach to increase smoking cessation education and referral from the emergency department.
4. To evaluate the program by conducting a second self-reported anonymous survey assessing the percent and frequency of nurses who screened for tobacco use and provided smoking cessation education and referral after the educational piece implemented by the investigator.

Data Analysis

The data was collected before and after implementation of the education program for the ED nurses. Microsoft Excel was utilized to analyze the data. A self-reported anonymous survey was utilized to collect information about frequency and percent of nurses who asked about tobacco use, assessed readiness to quit, advised to quit, and assisted with quitting. The first survey was collected prior to the educational program was implemented by the investigator. The education program was implemented with the staff. The same process of data collection previously mentioned was repeated after the implementation of the education piece. With the use descriptive statistics, an increase in smoking cessation education and referral was observed after the investigator had implemented the program. The same survey was utilized pre and post educational program implementation. A box was added to the post survey indicating if the nurse had participated in the educational intervention (see Appendix G).

Summary

The implementation of this project took place in a 19 bed emergency department in South Florida. Site support for this project was obtained from the site assistant vice president and nurse manager of the emergency department. After IRB approval was obtained from both the project site and Barry University, a purposeful convenience sample was utilized to select participants. Individuals who agreed to participate were given a cover letter with a blank envelope and a survey before and after an educational intervention was implemented. Both surveys were compared to assess the effectiveness of the educational program. The educational program given in the emergency department

by the principal investigator utilized information from different research studies and programs such as SBIRT, five As approach and AHEC. Visual aides such as PowerPoint were utilized during the education program to facilitate delivery of information. Other computer programs used to complete the project were Microsoft Excel and Word. After the educational program was implemented and data was collected pre and post, descriptive statistics was used to analyze and disseminate the data.

CHAPTER FOUR

Introduction

Smoking tobacco is one of the leading risk factors for the development of several disease processes such as heart disease, cancers, stroke and chronic obstructive pulmonary disease (CDC, 2011). The use of tobacco, according to the CDC, is considered the leading cause of preventable death. As per the American Lung Association (2013), World Health Organization (2013), and Centers for Disease Control (2011), smoking cessation is one of the most important steps an individual can take to improve current and future health status. Nurses are in the forefront of healthcare and are considered the largest group of healthcare providers. They are regularly involved in tobacco use screening but often fail to offer smoking cessation advice or referral to individuals who screen positive for tobacco use.

Project Objectives and How They Were Met

The objectives of this project were to identify key stakeholders, conduct a pre-education self-reported survey, implement an educational program to the staff, and conduct a post-education self-reported survey. The educational program was implemented using information from area health education centers (AHEC), American Lung Association, Tobacco Free Florida, Centers for Disease Control and Prevention, World Health Organization and Screening for Brief Intervention and Referral to Treatment (SBIRT). Two weeks after the educational intervention was completed, a post-education self-reported survey was collected from the staff. The nine-item survey assessed the percentage of nurses who ask about tobacco use, advise patients to quit,

assess readiness to quit, assist with quitting and arrange any form of follow-up, and use any SBIRT-provided tools to adjust level of intervention needed with patients.

The principal investigator met all the objectives of this project. Before the educational intervention was implemented, all stakeholders were identified. The project was discussed with the unit director and nurse clinician to seek approval. The assistant vice president was also consulted to gain final approval of the project. After approval was obtained from the stakeholder, a pre-Institutional Review Board meeting was held at South Miami Hospital. During this meeting, feedback was given to the principal investigator about the project and possible anticipated problems when submitting to full institutional review board (IRB) and implementation. Approval was obtained from both South Miami Hospital and Barry IRB before implementing this project. In both sites, the project qualified as exempt, which did not require full IRB review.

Flyers (see Appendix C) were posted in the ED staff lounge one week before the scheduled educational intervention. The principal investigator performed weekly scripting during day shift and night shift huddles to improve recruitment to the project (see Appendix D) pre-intervention for one week and post-intervention for two weeks.

On the day of the educational program, a packet containing a cover letter (see Appendix E), self-reported pre-educational confidential survey (see Appendix A), and blank envelope was provided to the ED nurse participants. They were given 15 minutes to complete this survey. The principal investigator stepped out of the room to allow participants to complete the survey in private. They were instructed to place completed

surveys in the blank envelope and deposit them in the designated collection box in the conference room.

The educational program was implemented utilizing information from Screening, Brief Intervention and Referral to Treatment (SBIRT) program, Area Health Education Centers (AHEC), and Tobacco Free Florida. SBIRT and AHEC programs are validated with multiple research studies demonstrating their effectiveness for substances such as tobacco. These nationally recognized programs assisted staff to identify, educate, and refer patients who screened positive for tobacco use. Interventions were dependent on the patient's level of addiction, the amount of tobacco used and readiness to quit. The program includes how to conduct smoking cessation education and referral with the guidelines provided by the Centers for Disease Control and Prevention (CDC), U.S. Preventive Services Task Force (USPSTF), Area Health Education Centers (AHEC), and U.S. Department of Human and Health Services. In a two-hour session using PowerPoint, nurses were educated on how to implement the program and understand the benefit of such an intervention. Staff was educated on tobacco use screening and the unit protocol, which includes flagging the client's chart if the client screens positive for tobacco use for further nursing intervention, counseling patients about smoking cessation, providing patients with quit-line numbers, and referring patients to AHEC for counseling services.

The implementation of the educational program took place in the emergency department conference area on the pre-designated dates included in the flyer and cover letters (see Appendices C, E, and F). The investigator allowed for groups of 10 nurses

from 7:00 am to 9:00 am to include day-shift staff and from 7:00 pm to 9:00 pm to include night-shift staff. Staff attended teaching sessions on either scheduled days to work in the emergency department, in which nursing personnel coverage was provided by management or during days off. A total of 80 nurses were targeted for the educational intervention in which a total of 60 participated. Multiple sessions were conducted to accommodate variant schedules. The educational program implementation took one week.

Two weeks after the implementation of the educational portion, a post-survey was provided to staff members to evaluate the effectiveness of the educational program implemented. A packet with a cover letter, blank envelope, and a post-survey was provided to staff members during morning and nighttime team huddles. They were instructed to place completed surveys in the box located at the conference room. The post-education self reported confidential survey included a box that, if marked, identified individuals who participated in the educational intervention. This helped the principal investigator identify the impact of the educational program by identifying nurses answering the survey who participated in the program and those who did not.

Project Findings

The total number of participants for this project was 52 registered nurses of the targeted 80 nurses. Out of the 52 who participated, 52 surveys were received before the education intervention, and 42 were collected two weeks post the educational intervention implementation. A nine-item survey was provided to ED nurses immediately before the education intervention (See Appendix A). The survey used a Likert scale from

0 to 10 assessing frequency of actions such as tobacco use screening, advising patients to quit, and referring to outside resources. In the survey, 0-3 represented rarely, 4-7 indicated some times, and 8-10 indicated most of the time.

The first survey question addressed nurses' frequency of screening for tobacco use. According to the surveys collected, 100% of nurses reported asking about tobacco use during triage most of the time. The following question in the survey addressed the frequency that nurses advise patients to quit once they screened positive for tobacco use. In this item, 46% of nurses reported that they rarely advise patients to quit, 29% reported that they advise some times, and 25% reported doing so most of the time. Item number three on the survey inquired about frequency that nurses assess readiness of the patient to quit. From the 52 nurses who responded, 69% reported rarely assessing readiness to quit, 19% reported performing this sometimes, and 12% reported performing this assessment most of the time. The fourth question of the survey screened for the frequency that nurses assist patients to quit smoking once they have been identified as smokers. From the total number of nurses who responded, 58% responded that they rarely assist clients to quit smoking, 25% reported assisting sometimes, and 17% most of the time. Question number five asked about the frequency that nurses arrange any form of follow-up or refer patients to outside sources. In this item, 87% of nurses reported rarely arranging for follow-up or referral, and 8% and 5% stated that they referred patients some times and most of the time, respectively. The following question in the survey addressed the ability of the nurse to evaluate level of intervention based on amount of tobacco used by the patient. From the nurses surveyed, 79% stated that they perform this task rarely, 19%

sometimes, and 10% most of the time. One of the recommendations of AHEC is to encourage the use of pharmacological agents to assist with smoking cessation. Item seven in the survey inquired about this. From this group, 71% answered that they rarely encourage pharmacological agents, 19% sometimes, and 10% most of the time. The following question addressed the use of materials from AHEC to assist patients to quit smoking. Examples would be the use of quit-lines, pamphlets, and other resources. In this question, 87% of nurses responded that they rarely used these resources with patients, 7% used them sometimes, and 6% used them most of the time. The last question of the pre-education self-reported survey asked about the use of the five As with patients during the triage interview and care provided in the ED. Out of the 52 participants, 79% reported rarely using this approach, 13% used this approach sometimes, and 8% used it most of the time. The following chart demonstrates the answers for each question from the ED nurses before the educational intervention. Each question is color coded with the frequency of responses from rarely, sometimes, and most of the time.

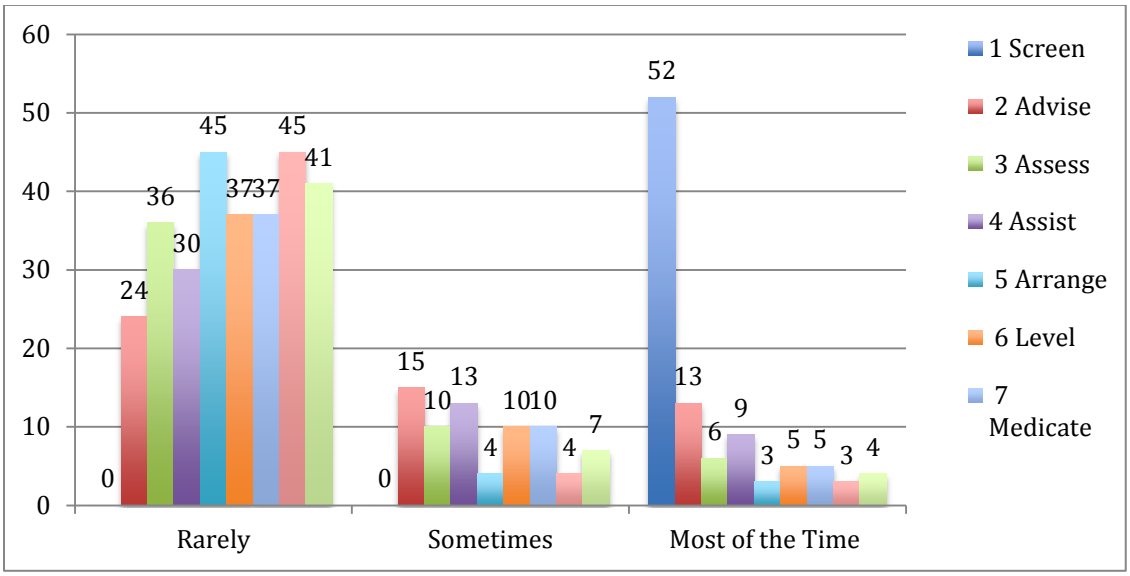

Figure 1. Cluster bar representation of pre-education self-reported confidential surveys.

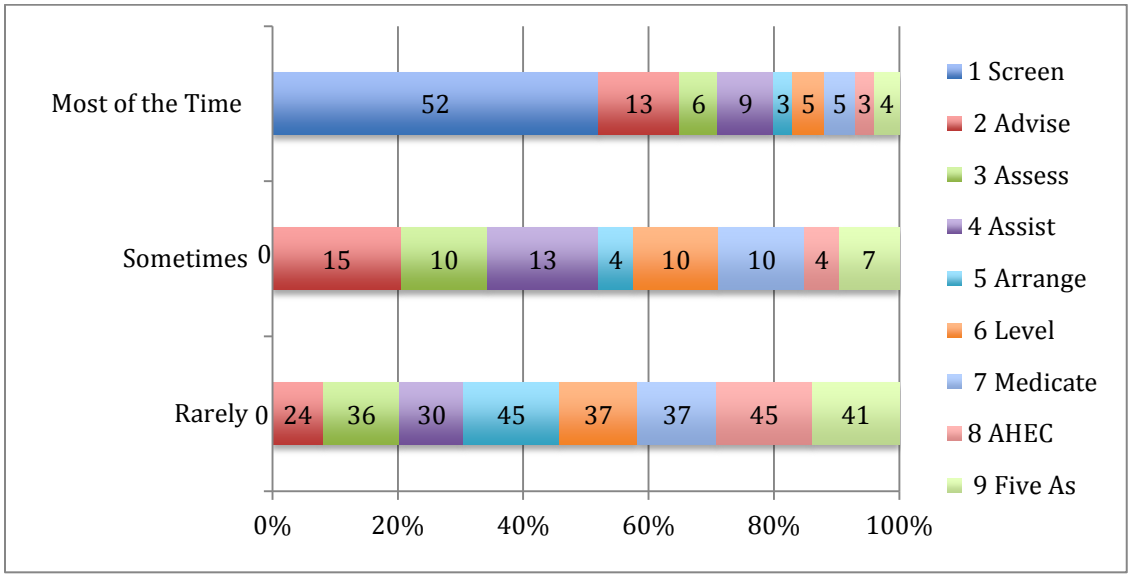

Figure 2. Stacked bar representation of pre-education self-reported confidential surveys.

Two weeks after the educational intervention, a second self-reported confidential survey was provided to willing ED nurses. Of the 80 nurses targeted in the ED, 42 returned surveys two weeks after the educational intervention. Question number one assessed frequency that nurses in the ED ask about tobacco use. When surveyed, 100% reported asking patients most of the time about tobacco use during the triage interview. The second item from the post-education survey asked the nurses about their frequency advising patients to quit tobacco. From the surveys received, 21% reported rarely advising patients, 48% stated doing it sometimes, and 31% most of the time. Once ED nurses were asked about their ability to assess patients' readiness to quit, 24% responded rarely assessing, 38% stated assessing some times, and 38% reported assessing most of the time. The fourth item of the survey inquires about the frequency that nurses assist patients to quit once they screen positive for tobacco use. Assisting patients to quit was considered to be providing patients with quit-line numbers, resources, pamphlets, and guidance about the process. Of the nurses who responded, 24% reported rarely assisting, 55% responded sometimes, and 21% answered most of the time. The fifth question in the post-education survey inquired about the frequency that nurses arranged for follow-up. Arranging for follow-up was considered referral of patients to the Area Health Education Centers (AHEC). From the 42 surveys received, 24% reported rarely arranging for follow-up, 57% said sometimes, and 19% reported most of the time. When nurses were asked about their frequency assessing patients' level of intervention based on tobacco use, 17% reported rarely performing this assessment, 59% said sometimes, and 24% reported most of the time. The seventh question in the post-intervention survey inquired

about the times nurses recommend pharmacological agents once the patient screens positive for tobacco use. Of all nurses, 17% reported recommending pharmacological agents rarely, 62% said sometimes, and 21% reported recommending agents most of the time. The eighth item of the survey asked nurses about their frequency of providing patients with information from AHEC to assist with the process of smoking cessation. In this item, 24% of ED nurses reported rarely providing information to patients, 47% answered giving information sometimes, and 30% most of the time. The last question in the survey after the educational intervention asked about the use of the five As method when treating patients who use tobacco. From the total number of nurses responses received, 12% reported using this approach rarely, 62% said they sometimes do, and 26% reported most of the time.

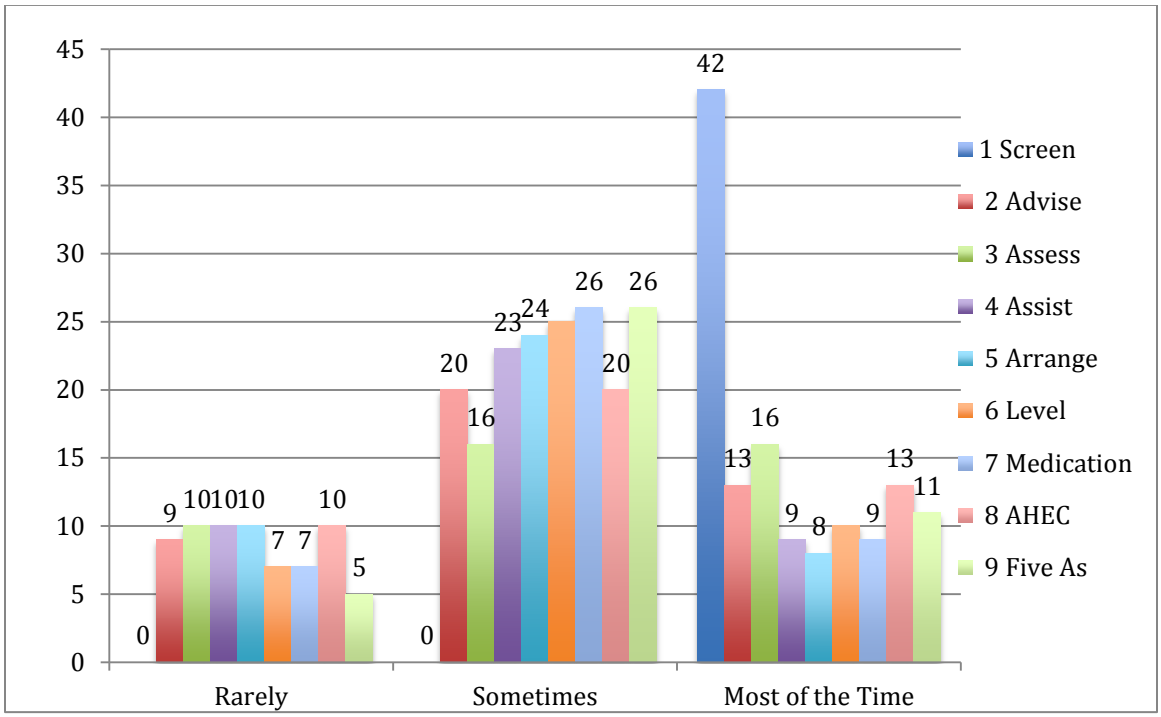

Figure 3. Cluster bar representation of post-education self-reported confidential surveys.

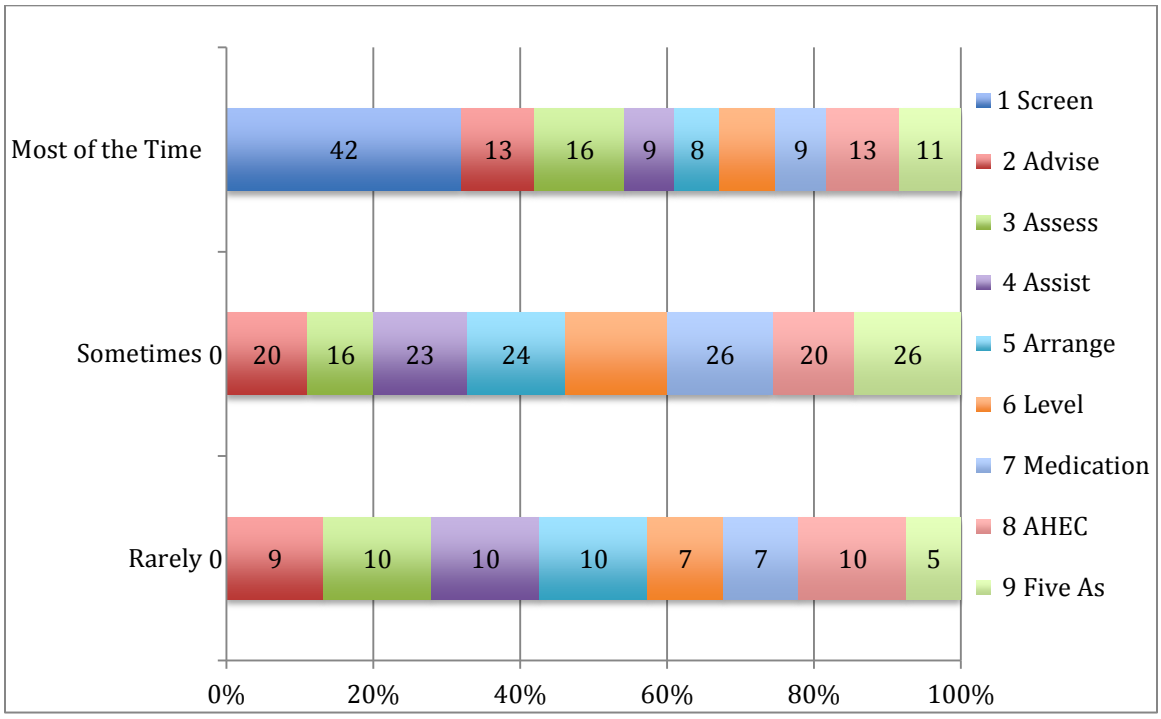

Figure 4. Stacked bar representation of post-education self-reported confidential surveys.

Strengths and Limitations of the Project

This project had both strengths and limitations. One strength identified was the data collection. The information collected during this project remained de-identified, which maintained the confidentiality of the participants. Additionally, information collected was stored under double key to safeguard it. The educational intervention provided was another strength of the project. Information provided to nurses by the principal investigator was obtained from Area Health Education Centers and SBIRT, which have been evaluated by different research studies supporting their effectiveness with individuals who smoke tobacco. Another strength identified was that employees

were not coerced into participating in this project by making the project optional without affecting the nurses' employment status.

One limitation to the study identified by the principal investigator was that the data collected was self-reported through the use of surveys, which lowered the reliability and validity of the data. Another limitation was having to receive approval from two different IRB committees, which delayed the start of implementation. A third limitation during this project was that because the principal investigator was employed by the ED where the project took place, access to patients' charts was not granted by pre-IRB.

Implications for Nursing Practice

The implementation of the project had implications to nursing practice. Nurses are in the forefront of healthcare and provide most of the care received by patients inside hospitals. One of the leading roles of the nurses is that of an educator. Although in the South Miami Hospital Emergency Department, nurses were accustomed to screening for tobacco use during triage, smoking cessation counseling and referral were not the norm for most nurses. The implementation of this educational program has changed this culture. More nurses in the ED are now not only providing patients who smoke with important information about tobacco cessation before they are discharged home but also are referring them to AHEC for additional services available. Some of the services available through AHEC are free counseling services and nicotine replacement products for these patients who are contemplating to quit or who are already trying to do so.

Implications for Healthcare Outcomes

This project had implications for healthcare outcomes. Based on the pre-educational self-reported surveys, nurses in the emergency department at South Miami Hospital were screening and documenting patients' tobacco use, but no further steps were taken to assist patients to quit smoking before being discharged. With the implementation of this project, nurses in the emergency department now are not only screening for tobacco use but also the number of nurses who are advising their patients to quit, providing materials to help with the process, and referring them to outside resources has increased. This additional information and support provided to patients from the Centers for Disease Control and Prevention and the American Lung Association doubles the chances of patients quitting smoking tobacco (ALA, 2008). Additionally, many of the complications patients return to the hospital with, such as heart problems, hypertension, stroke, lung problems, abdominal pain, wound infections, and decreased medication effectiveness, can be attributed partly to smoking tobacco (CDC, 2011). With effective smoking cessation education and referral being implemented by nurses in the emergency department before discharge, the number of patients who return to the hospital with these complications can be expected to decrease as well. Donabedian's (2005) theoretical framework assisted with the delivery of this project in the emergency department. The original linear model had to be adapted to a funnel shape model. The principal investigator did this adaptation of the model because during the implementation of the program in the emergency department, the three components of this model were interrelated to achieve the immediate outcome, which was to increase smoking cessation

education and referral by nurses. Long-term outcomes of this project were increased health promotion and disease prevention, decreased cost of healthcare, changes in healthcare policy, and decreased mortality/morbidity in our community. Although the principal investigator did not evaluate the long-term outcomes at this point, the use of this adaptation allows for the visualization and anticipation of these long-term outcomes.

Implications for Healthcare Delivery

This project has changed the delivery of health services at the project site's emergency department. Rather than waiting for patients to return with complications from tobacco use, nurses are being proactive in assisting these patients to stop smoking. Regarding tobacco use and its complications, the delivery of healthcare has shifted from a reactive to a proactive approach. Nurses are now promoting health and preventing disease through the use of effective smoking cessation education and referral from the emergency department before patients who smoke tobacco are discharged home. A tab was added to the discharged instructions section of the computerized system of the hospital for nurses to be able to document smoking cessation education and referral provided to patients before discharge home. The utilization of this tab allows for easier documentation not requiring free typing by the nurse and allows for easier extraction of de-identified data in the future by other scientists.

Implications for Healthcare Policy

This project has implications for healthcare policy in the emergency department. There is no current policy available for nurses in the ED, which delineates smoking cessation education practices. After this project was implemented, the nurses are starting

to plan the development of such policy. The policy will delineate the recommendations for both the triage nurse and the primary nurse for smoking cessation education and referral of patients who screen positive for tobacco use. Aside from having an impact on the local policy of the emergency department, this program may have an impact in the nationwide emergency department policies. This change on smoking cessation policy is one of the recommendations by both Healthy People 2020 and CDC guidelines. This nationwide impact may be achieved by transferring the information learned during the implementation of this project to other departments in which smoking cessation education is not the norm.

Future Research Recommendations

The data collected for this project was obtained from self-reported confidential surveys provided by ED nurses before and after an educational program was implemented. Having collected self-reported data, the reliability of the information is most of the time affected. A recommendation for future studies would be to perform a retrospective chart review in this department to evaluate frequency of nurses performing smoking cessation education on patients who screen positive for tobacco use before and after this educational program being implemented. Additionally, a study should evaluate qualitatively the limitations nurses have to implement smoking cessation education and referral from the ED. More research is also needed to evaluate the effectiveness of electronic cigarettes regarding smoking cessation and potential health complications of these devices.

Correlation to the Doctor of Nursing Practice Essentials

This DNP capstone project correlates to four of the eight DNP essentials described by the American Association of Colleges of Nursing (AACN). This project is correlated to essential number three from the DNP essentials, *Clinical Scholarship and Analytical Methods for Evidence-Based Practice.* Both research and practice are necessary for the nursing profession to exist. Research helps to shape practice and practice guides further research studies. Through this project, the principal investigator was able to utilize evidence-based information from different research studies to implement a smoking cessation program in the emergency department. With the implementation of this program, further studies may emerge, allowing for the nursing profession to continuously grow and evolve.

Information Systems/Technology and Patient Care Technology for the Improvement and Transformation of Health Care is the fourth essential described by the AACN. This project was associated with this essential because the principal investigator utilized technology to collect and analyze the data to further help with the creation of new knowledge and improve the nursing profession. Additionally, consumer health information from several peer-reviewed articles was reviewed and translated into clinical practice improving patient care in the emergency department. Technology was also utilized to present the findings of the project once it was implemented and the data was collected.

This project can be associated with essential number six, *Interprofessional Collaboration for Improving Patient and Population Health Outcomes*. During the

implementation of this project, the principal investigator collaborated with many individuals from within and outside of the nursing profession. The implementation of a smoking cessation program in the emergency department has also increased collaboration among the nurses in the department with other professionals such as social workers, respiratory therapists, and physicians caring for patients who smoked cigarettes.

One of the most important roles of the nurse is that of health promotion and disease prevention. DNP essential number seven, *Clinical Prevention and Population Health for Improving the Nation's Health*, emphasizes this important role. The main focus of this project was health promotion and disease prevention through smoking cessation education. The CDC has stated that smoking is the number one form of preventable death in the United States with one out of five deaths attributed to tobacco use (2011). One of the goals of this DNP project was to increase smoking cessation education and referral performed in the emergency department by nurses, further helping to meet the goals of Healthy People 2020.

Summary

The long-term benefits of smoking cessation have been well studied. The American Lung Association, the Centers for Disease Control and Prevention, American Heart Association, World Health Organization, and Tobacco Free Florida agree that smoking cessation is one of the most important steps an individual can take to improve his or her current and future health status. Smoking has been linked to the four leading causes of death in the United States, which are heart disease, stroke, cancer, and chronic obstructive pulmonary disease. Nurses are the largest group of health-care providers and

in the forefront of patient care. They play a pivotal role in the delivery of smoking cessation education with great capability to impact this patient population. The implementation of this project has increased not only the number of nurses who screen for tobacco use during visits to the emergency department but also the number of nurses who conduct smoking cessation counseling and referral before patients are discharged home. This project has significance because, according to AHEC, individuals who receive counseling and support from their health care providers are twice as likely to quit smoking when compared to those who do not have this support (2011).

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APPENDIX A

BARRY IRB APPROVAL

BARRY UNIVERSITY

[redacted]

OFFICE OF THE PROVOST
INSTITUTIONAL REVIEW BOARD

Research with Human Subjects
Protocol Review

Date:	August 5, 2013
Protocol Number:	130805
Title:	Implementation of a Smoking Cessation Education Program in the Emergency Department
Approval Date:	8/5/13
Name:	Mr. Juan M. Gonzalez
Address:	[redacted]
Sponsor:	Dr. Carolyn LePage Barry University School of Nursing

Dear Mr. Gonzalez:

On behalf of the Barry University Institutional Review Board (IRB), I have verified that the specific changes requested by the IRB have been made. Therefore, I have granted final approval for this study as exempt from further review.

As principal investigator of this protocol, it is your responsibility to make sure that this study is conducted as approved by the IRB. Any modifications to the protocol or consent form, initiated by you or by the sponsor, will require prior approval, which you may request by completing a protocol modification form.

It is a condition of this approval that you report promptly to the IRB any serious, unanticipated adverse events experienced by participants in the course of this research, whether or not they are directly related to the study protocol. These adverse events include, but may not be limited to, any experience that is fatal or immediately life-threatening, is permanently disabling, requires (or prolongs) inpatient hospitalization, or is a congenital anomaly cancer or overdose.

The approval granted expires on July 30, 2014. Should you wish to maintain this protocol in an active status beyond that date, you will need to provide the IRB with and IRB Application for Continuing Review (Progress Report) summarizing study results to date.

If you have questions about these procedures, or need any additional assistance from the IRB, please call the IRB point of contact, Mrs. Barbara Cook at [redacted] or send an e-mail to [redacted]. Finally, please review your professional liability insurance to make sure your coverage includes the activities in this study.

Sincerely,

Linda Bacheller, Psy.D., J.D.
Chair, Institutional Review Board
[redacted]

Cc: Dr. Carolyn LePage

Note: Note: The investigator will be solely responsible and strictly accountable for any deviation from or failure to follow the research protocol as approved and will hold Barry University harmless from all claims against it arising from said deviation or failure.

APPENDIX B

PROJECT SITE IRB APPROVAL

[redacted] [redacted]

October 22, 2013

Juan M. Gonzalez, BSN, RN, CEN
[redacted]

RE: IRB 13-086 Implementation of a Smoking Cessation Education Program in the Emergency Department (PI initiated)

Dear Mr. Gonzalez:

I have reviewed your application for the study listed above. This study qualifies as Exempt in accordance with the protection of human subjects category. 45 CFR 46.101(b) survey procedures. You may proceed and conduct your study as described in the IRB application.

Please notify the [redacted] Institutional Review Board (IRB) immediately if the study method is revised for which an exemption from IRB review would no longer be applicable. You must also notify the IRB if there are changes to study personnel.

Once you complete the study please send us a notification so that we may close our files.

You may contact the IRB Office at [redacted] if you have any questions.

Sincerely,

Maria J. Arnold, CIP
IRB Clinical Research Manager
[redacted]
Institutional Review Board

[redacted]

APPENDIX C

SBIRT PROGRAM OVERVIEW

4/1/2011 9:00 AM

Screening, Brief Intervention and Referral to Treatment (SBIRT) in Behavioral Healthcare

I. INTRODUCTION

This report discusses the evidence supporting the effectiveness of screening, brief intervention, and referral to treatment (SBIRT) as a comprehensive approach, as well as for the implementation and effectiveness of the individual components of SBIRT for different behavioral health conditions.[1] The report describes briefly the underlying research that has been conducted in the prevention and early intervention of risky alcohol, substance abuse and tobacco consumption, as well as commonly reported mental health problems, and describes existing studies/models for specific populations and settings. Further, the report addresses the question of what a model SBIRT program is, compared to programs which include or adapt components of the comprehensive SBIRT approach. Literature reviews are included in Attachment I. This paper is intended for use by policy makers, research organizations and governmental agencies seeking to understand the complexities of the SBIRT model and/or considering the adoption and implementation of SBIRT systems change or behavioral health integration within primary care settings.

Screening, brief intervention, and referral to treatment (SBIRT) was originally developed as a public health model designed to provide universal screening, secondary prevention[2] (detecting risky or hazardous substance use before the onset of abuse or dependence), early intervention, and treatment for people who have problematic or hazardous alcohol problems within primary care and other health care settings (Babor et al., 2007; Babor & Higgins-Biddle, 2001). Based on the SAMHSA model, SBIRT is unique in its universal screening of all patients regardless of an identified disorder, allowing health care professionals to address the spectrum of such behavioral health problems even when the patient is not actively seeking an intervention or treatment for his or her problems.

Following are the key points of this paper:

- SBIRT has been defined by SAMHSA as a comprehensive, integrated, public health approach to the delivery of early intervention for individuals with risky alcohol and drug use, and the timely referral to more intensive substance abuse treatment for those who have substance abuse disorders. **There is consensus that a comprehensive SBIRT model includes screening, brief intervention/brief treatment and referral to treatment. In addition to these**

[1] Excludes medical conditions.

[2] There is some discussion about whether SBIRT is selective prevention (Kumpfer & Baxley, (1997) or early intervention given the overlap in SBIRT's approach and objectives.

integral components, SAMHSA defines a comprehensive SBIRT model to include the following characteristics:

- It is brief (e.g., typically about 5-10 minutes for brief interventions; about 5 to 12 sessions for brief treatments).
- The screening is universal.
- One or more specific behaviors related to risky alcohol and drug use are targeted.
- The services occur in a public health non-substance abuse treatment setting.
- It is comprehensive (comprised of screening, brief intervention/treatment, and referral to treatment).
- Strong research or experiential evidence supports the model's effectiveness.

– No standard SBIRT definition has been articulated by the U.S. Preventive Services Task Force or other authoritative/coordinating bodies. The SAMHSA definition of SBIRT is based on methodology that was developed during the implementation of a comprehensive SBIRT grant program comprised of all the integral components, and supported by research by the National Institute on Drug Abuse and the National Institute on Alcohol Abuse and Alcoholism.

– There is substantial research on the effectiveness of SBIRT in reducing risky alcohol consumption. However, the evidence for the effectiveness of SBIRT in reducing risky drug use, although promising, is still accumulating. The results for the SAMHSA model of SBIRT for drug misuse are inconsistent depending on the characteristics of the provider, the specific setting, and the patient population that is targeted for SBIRT implementation. While there is robust evidence for screening and referral for depression in primary care, to date, little empirical evidence for the use of comprehensive SBIRT-like models for mental health problems commonly reported by health care patients. There is also no research that has demonstrated the implementation or effectiveness of SBIRT-like models in addressing trauma or anxiety disorders in clinical health settings.

II. THE SAMHSA SBIRT MODEL

SBIRT is a comprehensive, integrated, public health approach to the delivery of early intervention for individuals with risky alcohol and drug use, as well as the timely referral to more intensive substance abuse treatment for those who have substance use disorders. Primary care centers, hospital emergency rooms, trauma centers, and community health settings provide opportunities for early intervention with at-risk substance users before more severe consequences occur.

SAMHSA supports a research based comprehensive behavioral health SBIRT model which reflects the six following characteristics:

1. It is brief. The initial screening is accomplished quickly (modal time about 5-10 minutes) and the intervention and treatment components indicated by the screening results are completed in significantly less time than traditional substance abuse specialty care.

2. The screening is universal. The patients, clients, students, or other target populations are all screened as part of the standard intake process.

3. One or more specific behaviors are targeted. The screening tool addresses a specific behavioral characteristic deemed to be problematic, or pre-conditional to substance dependence or other diagnoses.

4. The services occur in a public health, or other non-substance abuse treatment setting. This may be an emergency department, primary care physician's office, school, etc.

5. It is comprehensive. The program includes a seamless transition between brief universal screening, a brief intervention and/or brief treatment, and referral to specialty substance abuse care.

6. Strong research or substantial experiential evidence supports the model. At a minimum, programmatic outcomes demonstrate a successful approach.

As a comprehensive or model approach, SBIRT has only been demonstrated to be effective for risky alcohol use. There is substantial evidence for the effectiveness of brief interventions for harmful drinking when delivered by a physician or other qualified health professional (Bien et al, 1993; Kahan et al, 1995; Wilk et al, 1993). There is a growing body of literature showing the effectiveness of SBIRT for risky drug use (Madras et al, 2008; Saitz et al, 2010; Bernstein et al., 2005) but the results vary by the characteristics of the provider, the specific setting, and the patient population that is targeted for SBIRT implementation.

To determine the effectiveness of SBIRT beyond alcohol, a comprehensive literature review was conducted. SBIRT-like models including not only a simple screening tool, but also an appropriate and brief intervention that addressed the level of problem indicated by the screening results. Table 1 (p. 4) identifies the substance abuse and mental health conditions where SBIRT or components of SBIRT have been employed. The literature review did not include studies that employed SBIRT or approaches that are similar to SBIRT for general medical conditions such as blood pressure, HIV/AIDS, or other behavioral issues such as domestic violence.

As shown in Table 1, the comprehensive SBIRT model has not been consistently demonstrated as effective in addressing harmful or risky drug misuse, depression, trauma, or anxiety problems. Findings showing the effectiveness of SBIRT for drug misuse are accumulating, and there is some programmatic data from the SAMHSA State SBIRT programs showing promising findings for depression among primary care patients. Public health approaches that are consistent with the SBIRT model have also been demonstrated for tobacco use. They are described in the latter sections of this paper. Table 1 presents a brief analysis of the evidence for the effectiveness of SBIRT for various behavioral health conditions.

Table 1. EFFECTIVENESS OF SBIRT AND ITS COMPONENTS FOR BEHAVIORAL HEALTH CONDITIONS

	Screening	Brief Intervention[1]	Brief Treatment[2]	Referral to Treatment	Evidence for Effectiveness of SBIRT
Alcohol Misuse/Abuse	✓	✓	✓	✓	Comprehensive SBIRT effective (Category B classification, USPSTF)
Illicit Drug Misuse/Abuse	✓	*	*	✓	Growing but inconsistent evidence
Tobacco Use	✓	✓	✓	✓	Effective brief approach consistent with SBIRT (USPSTF; 2008 U.S. Public Health Service (PHS) Clinical Practice Guideline
Depression	✓	—	✓	✓	No evidence to date for depression
Trauma/Anxiety Disorders	✓	*	—	✓	No evidence to date for trauma/anxiety disorders

Key: ✓ Evidence for effectiveness/utility of component

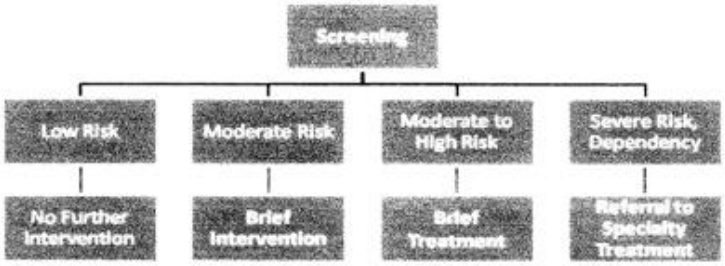
* Component Demonstrated to show Promising Results

— Not Demonstrated and/or Not Utilized

[1]Brief intervention as defined by the SAMHSA SBIRT program involves 1-5 sessions lasting 5 minutes to an hour. Among SBIRT grantees funded by SAMHSA, about 15% of patients receive scores that indicate a brief intervention.

[2]Brief treatment as part of SBIRT involves 5-12 sessions, lasting up to an hour. Among State SBIRT grantees funded by SAMHSA, about 3% of patients receive a score that dictates a brief treatment.

Chart 1. FLOW CHART FOR SBIRT PROCESS



Screening

Universal screening helps identify the appropriate level of services needed based on the patient's risk level. Patients who indicate little or no risky behavior and have a low screening score may not need an intervention. Those who have moderate risky behaviors and/or reach a moderate threshold on the screening instrument may be referred to brief intervention. Patients who score high may need either a brief treatment or further diagnostic assessment and more intensive, long term specialty treatment. Screening typically takes 5-10 minutes and can be repeated at various intervals as needed to determine changes in patients' progress over time. Some commonly used screens for the implementation of SBIRT for alcohol and drug use are the Alcohol Use Disorders Identification Test (AUDIT), Drug Abuse Screening Test (DAST), Alcohol, Smoking, Substance Involvement, Screening Test (ASSIST), and the Cut Down, Annoyed, Guilty, Eye-Opener (CAGE). In addition, a recent study found a single question related to drug use to be effective in detecting drug use among primary care patients (Smith et al., 2010).

Prescreening, which is not a core component of SBIRT but is frequently used, reduces the time needed by busy clinic staff to identify patients with risky behavior. Examples of validated pre-screens are the Alcohol Use Disorders Identification Test-Consumption (AUDIT-C), which consists of the first three alcohol consumption questions from the full 10-item AUDIT questionnaire, and the NIAAA prescreening question ("On any single occasion during the past 3 months, have you had more than 5 drinks containing alcohol?", Taj et al., 1998). If a patient scores high on any domain in the pre-screen, a full screen is conducted.

Brief Intervention (BI) and/or Brief Treatment

Patients are provided with BI, brief treatment, or referral to intensive specialty treatment depending on their level of risk using a validated pre-screen and/or screening tool (Babor & Higgins-Biddle, 2001). With respect to substance abuse, in general only a small proportion of patients in primary care settings screened positive for some level of substance misuse, abuse or dependency. This is usually 5%-20%, but may be as high as 40% in some clinical settings. The majority of patients report minimal or no problems with alcohol or drugs and as such may be an ideal group for primary or universal prevention activities for maintenance of non-risky use or abstinence. The goal of a BI (which usually involves 1-5 sessions lasting about 5 minutes to one hour) is to educate patients and increase their motivation to reduce risky behavior.

The goal of brief treatment (which usually involves 5-12 sessions) is to change not only the immediate behavior or thoughts about a risky behavior but also to address long-standing problems with harmful drinking and drug misuse and help patients with higher levels of disorder obtain more long term care. Based on performance data from state SBIRT grantees funded by SAMHSA, only about 3% receive a score that indicates a brief treatment. Patients referred to a brief treatment often have higher risk factors than those referred to a BI. Brief treatment may also require a manualized course of (advanced) motivational enhancement and cognitive behavioral approaches to help patients address unhealthy cognitions and behaviors associated with current use patterns and adopt change strategies. If patients report greater risk factors than what brief treatment can address, they are referred to specialty substance abuse care. In some cases, a patient may receive a BI first and then move on to a brief treatment or longer term care. Although the time required to execute BI/BT is generally considered brief, it is far too lengthy for physicians to do. Also, physicians cite concerns about angering or insulting patients by bringing up sensitive issues such as alcohol and/or drug use. While these concerns are understandable, when SBIRT is implemented properly, the time commitment is reasonable and acceptably low given the demonstrated success in identifying persons requiring referral to treatment (RT). Similarly, concerns about patient reactions can be neutralized by proper training for the providers and ensuring that access to referral services is available. In addition, SBIRT is frequently implemented by allied health professionals such as nurses, social workers, or health educators, with results and actions noted in the patient chart for physician notification and oversight.

Referral to Treatment (RT)

Referral to treatment can be a complex process involving coordination across different types of services. As such, the absence of linkages to treatment referrals can be a significant barrier to the adoption of SBIRT. Referral is recommended when patients meet the diagnostic criteria for substance dependence or other mental illnesses as defined by the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV).[3] In these cases, a referral to a specialized treatment provider is often made. Referral requires the primary care system to establish new and complex linkages with the traditional specialty care system to connect clients who score in the problematic range to recognized, evidence based treatment in a timely manner. Although only 3% to 4% of screened patients in primary care settings typically need to be referred, the absence of a proper treatment referral will prevent the patient from accessing appropriate and timely care that can impact other psychosocial and medical issues. Research findings suggest that motivational-based BIs can increase patient participation and retention in substance abuse treatment (Hillman et al., 2001; Dunn and Ries, 1997). Strong referral linkages are critical, as well as tracking patient referrals. SAMHSA requires SBIRT grantees to have a comprehensive referral to treatment and follow-up system in place for the duration of the program. In the case where RT is incorporated into an integrated care model, this may require shifts in provider allocation and hiring.

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[3] The diagnostic criteria are likely to change when DSM V is released in 2012 or 2013.

The following characteristics of SBIRT identified in the research literature (see Reference section) have been shown to be important in effectively addressing behavioral health problems. They have therefore formed the foundation for the SAMHSA SBIRT programs.

1) Use of brief, validated, universal pre-screening/screening tools. These tools allow health care professionals to address the problem behavior even when the patient is not actively seeking treatment for his or her problem. Prescreening/screening tools accurately and quickly identify individuals with problematic conditions in as little time as 2-4 minutes. Because of its briefness and its universal application (that is, can be used with all patients), SBIRT may be more generally accepted by health care professionals working in busy practices.

2) Relatively easy to learn by diverse providers. The SBIRT approach is easy to learn relative to other behavioral treatment techniques that may require lengthy specialized training. As such, it can be implemented by diverse health professionals who work in busy medical settings such as physicians, nurses, social workers, health educators and paraprofessionals.

3) Incorporation of strong referral linkages to specialty treatment. Approaches that are effective integrate comprehensive strategies that include referral to specialty treatments (Gentillelo, Donavan, Dunn & Rivara, 1999). While RT may be difficult in underserved areas, this should not deter programs from engaging in developing SBI activities as they have beneficial effects separate from the referral. However, the goal is to provide a quick handoff for dependent patients to specialty treatment if the primary care site cannot provide more intensive services for substance abuse. Establishing linkages with specialty care through identification of local treatment service contracts, an MOU agreement between sites, or dedicated central referral services has been a major barrier for many providers in their decision to adopt SBIRT. The availability of well established referral linkages to specialty care is essential to the uptake and maintenance of SBIRT, and closely tracking to confirm patient compliance with treatment is critical to good health care provision. Primary care locations engaged in referral to specialty care make efforts to determine the patient's engagement and participation in treatment, as this may also affect the course of treatment in the general medical practice.

III. ALCOHOL MISUSE, ABUSE, AND PREVENTION

There is substantial evidence from review studies (Babor, 2007; Bein et al, 1993; Kaner, et al., 2009) and meta-analyses of randomized clinical trials (Beich et al., 2003; Bertholet et al, 2005) that show the effectiveness of SBIRT in reducing hazardous drinking in patients presenting in primary care and other health care settings. The U.S. Preventative Services Task Force (USPSTF) has recommended that "behavioral counseling interventions for risky/harmful alcohol use among adult primary care patients can provide an effective public health approach to reducing problematic drinking" (USPSTF, 2004). The USPSTF also concluded that counseling for risky drinkers should include advice to reduce current drinking; feedback about current drinking patterns; and explicit goal-setting, usually for moderation and assistance in achieving the goals.

Research also indicates that despite the robustness of the evidence for SBIRT's effectiveness for unhealthy alcohol drinking, other factors can impact its effects. For example, studies have shown that multiple contacts or sessions (in contrast to a single contact) with a provider can increase the impact of SBIRT in reducing risky alcohol consumption (Brown et al., 2007; Longabaugh et al., 2001). Moreover, demographic factors and psychosocial conditions also have been shown to influence SBIRT's effects on alcohol misuse (Saitz et al., 2006). For example, homelessness makes SBIRT less effective due to the challenges involved in working with this population, and brief interventions have improved linkages with those who can provide assistance to younger men and hospitalized women.

The conduct of universal screening, brief intervention and treatment, and referral to treatment for alcohol disorders has been found to be effective in various healthcare settings for diverse patient populations including primary care (Babor et al., 2007), emergency departments (Gentilello et al., 1999), as well as schools and colleges (O'Brian et al., 2006). Data are currently being collected that suggest that SBIRT may also be effective in addressing alcohol problems in employee assistance programs (McPherson and Goplerud, 2008). Recent research also has demonstrated the efficacy of conducting screenings and BIs using innovative strategies such as the use of personalized feedback via the internet (Cunningham, 2010), as well as web-based outcomes monitoring to assist with treatment decisions and cognitive behavioral techniques (Roy-Bryne, 2010).

Also promising is the utilization of computerized interventions which has been shown to be effective in augmenting and complementing the gains made through the initial face to face brief interventions. The Veterans Administration, for example, examined the use of electronic clinical reminders with patients following screening with the AUDIT-C and showed such approaches reinforced moderate drinking reductions at follow up (Williams, 2010). Other research reviews indicate that electronic methods can enhance brief interventions with substance users by offering assessment and feedback in brief motivational interviewing; monitoring individual treatment patient's progress; tracking patients in aftercare; and providing educational opportunities for clinicians (Cucciare, 2009). Electronic intervention can also help bridge the treatment capacity gap by providing another source of assistance for women who do not complete traditional substance abuse treatment (Van DeMark, et al., 2010). In addition, the cost savings offered by the implementation of SBIRT in primary care are significant. One study (Gentilello, 2005) showed that for every one dollar spent on providing SBIRT approximately $3.81 is saved. The Washington State SBIRT program cost study also reflects similar savings.

The concept of SBIRT can be applied across the continuum of care for alcohol problems. Based on the severity of the problem indicated by the screening results, interventions ranging from universal prevention to brief interventions to traditional specialty treatment can be provided to health care patients. For individuals who are abstinent, universal prevention practices can be implemented to sustain alcohol abstinence. For moderate risky drinking, the first two components of SBIRT – screening and brief interventions (SBI)– may be implemented which can address inappropriate expectancies (beliefs about substance use effects and social norms of acceptable behavior) and lack of motivation to change risk factors that contribute to substance abuse (Dimeff et al., 1999).

Extensive research supports screening and brief intervention as effective universal and selective prevention strategies for alcohol problems. Universal screening with educational content has measurable prevention effects with accompanying feedback (Kunz et al., 2004). The prevention approach may also be successful for abstainers and non-risky drinkers by providing behavioral support and normative information to maintain healthy behaviors. For at-risk individuals, early identification and brief intervention around false expectancies, normative use misperceptions and skills acquisition can prevent progression to severe drinking problems. For example, the BASICS program, which is consistent with the SBIRT approach, has been shown to be effective in addressing problematic or risky drinking in college age groups (Dimeff et al., 1999). SBIs also incorporate motivational interviewing components (Miller and Rollnick, 2002) that are also integrated in brief treatment for higher risk patients. SBIs have proven effective in decreasing overall consumption and binge drinking (Casset et al., 2008; Hanewinkel & Wiborg 2005; Kunz Jr. et al., 2004; Martens et al., 2007; Heather et al., 2004; Toumbourou et al. 2007; Murphy et al., 2001), as well as increasing productivity (Osilla et al., 2010). Evidence further demonstrates that strengthening resiliency, competencies, and social connectedness supports recovery for those individuals who show early symptoms of alcohol misuse.

Extensive reviews of the effectiveness of SBI (Babor et al., 2007, 2008) have found that there are "irrefutable" improvements in short-term health benefits as well as indications of "substantial" long-term benefits. Follow up at three, six or nine month intervals can help document the effectiveness of SBI and reinforces normative ideation and skills enhancement for individuals with minimal risk behaviors. To achieve long term effects, SBI must be implemented with fidelity through targeted training for providers (Cameron et al., 2010; Seale et al., 2005; Christensen et al., 2004; Bray et al., 2009; Ronzani et al., 2008; Furtado et al., 2008; Heather et al., 2004; Tollison et al., 2008; Babor et al., 2004; Brown & Fleming, 1998). In many instances providers implementing SBI may not necessarily be physicians but allied health professionals such as nurses, counselors, health educators, and peers (Mastroleo, 2009; Blume & Marlatt, 2004), who may experience fewer barriers in service provision than physicians (Babor et al., 2004). Also, SBI can be conducted individually or with groups (Shellenberger et al., 2009; Henslee, 2009), with web-based instruments (i.e. college oriented E-Chug and E-Toke or Alcohol Skills Training Programs), or online feedback (Blume & Marlatt, 2004), and applied through strategic planning by communities or providers.

IV. DRUG MISUSE, ABUSE, AND PREVENTION

In 1995, based on the scant availability of published research on SBIRT for drugs, the USPSTF (1995) determined that there was "insufficient evidence to recommend for or against" the effectiveness of using an SBIRT approach for drugs. Some researchers have cited the relative scarcity of validated brief drug screening tools (Smith PC, et. al., 2010) and the low prevalence rates of drug use (Saitz, 2010) in primary care settings, as two reasons for the comparatively small number of studies showing SBIRT's effects with drugs (De Micheli D, et. al., 2004). Nevertheless, since 1995, there has been a growing body of investigator-initiated research as well as findings from SAMHSA-funded SBIRT projects that have shown promising results for the use of the comprehensive SBIRT approach, as well as selected use of individual components, in reducing risky drug use (Copeland et al., 2001). For instance, a randomized controlled trial indicated that BIs can reduce cocaine and heroin use (Bernstein et al., 2005). Motivational

interviewing coupled with a self-help booklet given to regular amphetamine users also resulted in reduced levels of drug use (Baker, Lee, Claire, Lewin, Grant, & Pohlman, 2005). BIs for patients screening positive for cocaine, heroin, and amphetamine are also showing promising results in various settings beyond emergency departments (Cunningham et al., 2009). In small sample sizes, screening and BIs have been linked with reductions in the use of marijuana, amphetamine-type stimulants, cocaine, and heroin (Madras et al., 2008). The World Health Organization (2008) sponsored a multi-national study demonstrating that screening and brief interventions resulted in short-term reductions of a wide variety of illicit drugs, including marijuana, cocaine, amphetamine-type stimulants, and opioids.

As with alcohol consumption, universal and selective prevention efforts may also be targeted to those with minimal or mild drug misuse. Like with alcohol, identified abstainers can benefit from supportive and normative information to maintain healthy lifestyles. For individuals at risk for drug problems, early identification and brief intervention around false expectancies and skill acquisition can prevent progression to more severe drug problems. In addition, tools that can be used for universal screening of drug use in health settings such as the DAST and the ASSIST as well as on-line tools such as E-TOKE (Electronic – THC Online Knowledge Experience) are prevention-ready applications designed to detect the presence of drug use.

V. SBIRT AND TOBACCO USE

The utility of SBIRT approaches for all forms of tobacco use, especially smoking, has been endorsed by the USPSTF and has elicited interest in primary care and hospital personnel. Cigarette smoking continues to be the leading cause of preventable disease and death in the United States (USDHHS, 2004) and is attributed to approximately 443,000 deaths per year (CDCP, 2010) from lung cancer: ischemic heart disease, chronic obstructive pulmonary disease, strokes, and other diagnoses. Smoking also affects health outcomes of people other than the smokers, with smoking during pregnancy resulting in premature births, spontaneous abortions, stillbirths, and intrauterine growth retardation. In addition, research has shown that psychiatric disorders and cigarette smoking are frequently co-morbid conditions (Dome et al, 2010; Brown et al, 2008; Brown et al, 2002; Degenhardt & Hall, 2001; Grant et al, 2004). A recent study using data from the 2005-2006 National Survey on Drug Use and Health reported that adults with lifetime depression, anxiety, anxiety with depression, or major depressive episodes were more likely to be "current smokers, smoke with higher intensity and frequency, have more dependence, and have lower success at quitting" when compared to individuals without these psychiatric conditions (Trosclair & Dube, 2010).

However, despite smoking's established risks and the health benefits of quitting, 23 percent of adults in the United States continue to smoke and more than 2,000 adolescents become regular tobacco users daily (NSDUH, SAMHSA). Nearly 90 percent of smokers start by age 18, and 25 percent of teen smokers remain addicted as adults. Because 70 percent of smokers see a physician each year (Fiore, Bailey, Cohen, et al., 2000) clinicians have a unique opportunity to intervene and implement tobacco SBIRT in primary care settings and emergency departments.

As such, the USPSTF strongly recommends that clinicians screen all adults for tobacco use and provide brief interventions, including screening, brief behavioral counseling (less than 3 minutes), and pharmacotherapy delivered in primary care settings. The USPSTF also strongly

recommends that clinicians screen all pregnant women for tobacco use and provide augmented pregnancy-tailored counseling to those who use tobacco products. These interventions have been shown to be effective in increasing the proportion of smokers who successfully quit smoking and remain abstinent after 1 year.

The USPSTF advises that the clinical interventions for tobacco cessation that are cited in the 2008 U.S. Public Health Service (PHS) Clinical Practice Guideline, *Treating Tobacco Use and Dependence* (Fiore et al, 2008), become integrated in standard clinical practice. The PHS Guideline also recommends that clinicians use the screening instrument known as the 5A's of tobacco use intervention, which provides a useful strategy for engaging all medical patients in smoking cessation discussions. The 5A's are consistent with the SBIRT approach and parallel the screening and brief intervention or counseling components of the SBIRT model.

1. ***Ask*** about tobacco use.
2. ***Advise*** to quit through clear personalized messages.
3. ***Assess*** willingness to quit.
4. ***Assist*** to quit.
5. ***Arrange*** follow-up and support.

The Guideline's behavioral treatments include counseling, social support, problem solving, and cessation skills training offered in face-to-face individual or group formats or via telephone quit lines. Medication assisted treatments for tobacco use/dependence have also been suggested and include seven FDA-approved, first-line medications (i.e., bupropion SR, nicotine gum, inhaler, lozenge, nasal spray, and patch), and two second-line medications (clonidine and nortriptyline).

The Agency for Healthcare Research and Quality (AHRQ) also reviewed tobacco guidelines developed in England in 2006 and supports recommendations for brief interventions for patients who use tobacco products, including: simple advice to stop, assessment of the patients' commitment to quit, an offer of pharmacological or behavioral support, and provision of self help materials or referral to supportive resources such as Quit lines.

VI. DEPRESSION

The USPSTF supports screening for adult depression where accurate diagnosis, effective treatment, and follow-up are available. The USPSTF also recommends screening adolescents (12-18 years of age) for major depressive disorder (MDD), again with accurate diagnosis, psychotherapy (cognitive behavioral or interpersonal), and follow-up. There are many commonly used screening tools for depressive symptoms, such as the Patient Health Questionnaire 2 (PHQ-2) (Kroenke, et al., 2003) and the Patient Health Questionnaire 9 (PHQ-9) (Kroenke, et al., 2001) which both have established validity and reliability.

Primary care physicians are the providers most likely to see patients when they first become depressed and are most capable of initiating and monitoring treatments with pharmacologic agents (McNaughton, 2009). Previous studies, however, have shown that at least half of patients with active depression seen by primary care physicians remain undiagnosed (Spitzer et al, 1994; Schulberg et al., 1988; Ormell et al, (1991). Depression is particularly prevalent among "high

utilizers" of medical care resources, of whom as many as 40% have been found to have a current depressive illness (Katon et.al., 1990). Due to time constraints and training issues, physicians in primary care are often unable to provide effective behavioral interventions and treatments for the patients with mental disorders (McNaughton, 2009).

Promising but preliminary data are available from SBIRT grantees funded by SAMHSA that indicate that the SBIRT approach may be adapted for depression treatment. For example, the State of Wisconsin incorporated depression screening into a Wisconsin Initiative to Promote Healthy Lifestyles (WIPHL) pilot program. Patients with mild or moderate depression were provided behavioral activation by health educators using specific protocols developed by the program.

Behavioral activation also offers promise as a strategy for brief intervention and there is some evidence that it would fit an SBIRT-like approach. Behavioral activation assists individuals to identify and engage in daily activities and situations they find positively reinforcing and consistent with their long-term goals (Dimidjain et al., 2006). Behavioral activation as a brief intervention has been demonstrated in three meta-analyses, one randomized control trial, and one follow-up study of a previous randomized control trial, to be an effective intervention for the treatment of depression (Sturmey, 2009).

VII. ANXIETY DISORDERS AND TRAUMA

Anxiety disorders are among the most common mental health problems seen in primary care settings and as many as one-third of primary care patients have been found to have significant anxiety symptoms (Fifer, 1994). Approximately 15% of primary care patients have a current anxiety disorder, and 24% have had a lifetime anxiety disorder, as assessed by diagnostic interviews (Nisenson et al., 1998). Primary care patients with anxiety disorders typically have considerable disability and impairment in functioning (Roy-Byrne et al., 1999; Sherbourne et al., 1996) and high utilization rates of general medical services which ultimately result in higher health care costs (Simon et al., 1995). Screening tools are also available for anxiety such as the Brief Symptom Checklist-18 (Derogatis, 2001) which provides a measure of both anxiety and depression. The My Mood Monitor (M-3) (Gaynes et al., 2010) screening is a valid and efficient one page tool for screening multiple common psychiatric illnesses in primary care and other settings. The M-3 can function both as a screen for specific anxiety and mood disorder diagnoses, as well as a general screen for the presence of any mood or anxiety disorder in addition to bipolar disorder and PTSD.

Interventions such as passive psychoeducation, including bibliotherapy, have been shown to reduce symptoms of anxiety, psychological distress, and depression (Donker et al., 2009). These approaches may be offered as a brief intervention to patients who screen positive for mild or moderate levels of anxiety. Passive psychoeducational interventions are cost-effective and can be easily put into practice by non medical professionals and may have a less-stigmatizing impact on consumers, especially when delivered through a Web site, e-mail or a brochure (Donker et al., 2009) .

Evidence of emotional trauma is also common in primary care. Walker et al.(1993) report that rates as high as 37% for childhood sexual abuse and 29% for adult sexual assault are evident in primary care settings. Walker et al. found that 61% of women reported that they believed that it was appropriate for their primary care physician to ask about previous victimization, but only 4 percent had been actually asked. In the Adverse Childhood Experiences (ACE) Study (Dube et al., 2004), patients received an assessment using the Family Health History and Health Appraisal questionnaires as measures. The authors found the reliability statistics of the ACE study support the use of these questionnaires for retrospective reports of adverse childhood experiences such as childhood maltreatment, household dysfunction, and other socio-behavioral factors. Other tools for screening trauma and anxiety include: the Trauma Symptom Inventory (Briere, 1995), the PTSD-8 (Hansen, et al., 2010), and the Primary Care PTSD Screen (PC-PTSD) (Prins, et al., 2003).

The National Child Traumatic Stress Network has developed an evidence-based practice which may be suitable for use in a BH SBIRT program. The Trauma Adaptive Recovery Group Education and Therapy for Adolescents and Pre-Adolescents (TARGET-A) has been evaluated in 248 clinical trials with control groups and can be completed in as little as 4 sessions. This intervention is designed for groups and/or individual children, adolescents and their parents that is easily adapted to settings where youth or families enter and leave services rapidly (NCTSN, 2008).

The prevalence of issues such as depression, anxiety, and trauma among primary care patients call for further exploration to determine if certain SBIRT components may be applied to symptoms of these disorders among medical patients. These findings also highlight the value of universal screening, a principal component of SBIRT, in addressing mental health issues in primary care and other health care settings.

VIII. IMPLICATIONS FOR FUTURE PROGRAMS

While there is substantial research for the effectiveness of SBIRT in reducing unhealthy alcohol use and tobacco use/misuse, the evidence for similar models in addressing drug abuse and mental health conditions such as depression, anxiety and trauma is still being developed. As such, SAMHSA would recommend investment in developing SBIRT-like models for most common behavioral health conditions, for use in public health settings. This would involve services research, demonstrations, and conducting rigorous comparative effectiveness evaluations of behavioral health SBIRT programs beyond those already proven effective for alcohol or tobacco, in possible collaboration with NIMH, NIAAA and/or NIDA.

Numerous screening and intervention programs in a variety of settings and populations have recently defined themselves as "SBIRT programs." Most often these programs do not meet the criteria established in this paper to be designated as a comprehensive SBIRT model. Both a strong research base and more consistent terminology and definitions for what constitutes a true SBIRT model are lacking. Although SBIRT and its components have been utilized across programs, the effectiveness of SBIRT programs can vary in their fidelity, application, and comprehensiveness.

In considering the future of SBIRT program implementation, some or all of the following could be pursued:

- Partnership with one or more external, authoritative bodies. This may involve approaching the US Preventative Services Task Force to develop an SBIRT definition and/or taxonomy which reflects the latest science-base approach and is vetted with the field.

- Collaboration with NIH (NIDA, NIMH) and/or AHRQ to conduct more research on SBIRT approaches for drug abuse, depression, anxiety, trauma, etc., to help establish parameters that are critical to effective implementation.

- Diversifying the SAMHSA SBIRT program portfolio and dedicating increased evaluation resources to examine the value of complementing SBIRT for alcohol and drugs with screening and intervention for other behavioral health conditions.

APPENDIX D

LETTER OF SUPPORT FROM FACILITY

[redacted] [redacted]

September 18, 2012

To Whom It May Concern:

This letter is to acknowledge that upon approval from the Institutional Review Board (IRB) Juan Gonzalez, RN has our support to implement the "Smoking Cessation Education Program" in the Emergency Department.

Please do not hesitate to contact me at [redacted] if you have any questions.

Sincerely,

Diane Amado-Tate, MS, MSN, RN
Assistant Vice President

APPENDIX E

WHO ASSIST 3.0 QUESTIONNAIRE

A. WHO - ASSIST V3.0

INTERVIEWER ID _____ COUNTRY _____ CLINIC _____

PATIENT ID _____ DATE _____

INTRODUCTION *(Please read to patient)*

Thank you for agreeing to take part in this brief interview about alcohol, tobacco products and other drugs. I am going to ask you some questions about your experience of using these substances across your lifetime and in the past three months. These substances can be smoked, swallowed, snorted, inhaled, injected or taken in the form of pills (show drug card).

Some of the substances listed may be prescribed by a doctor (like amphetamines, sedatives, pain medications). For this interview, we will not record medications that are used as prescribed by your doctor. However, if you have taken such medications for reasons other than prescription, or taken them more frequently or at higher doses than prescribed, please let me know. While we are also interested in knowing about your use of various illicit drugs, please be assured that information on such use will be treated as strictly confidential.

NOTE: BEFORE ASKING QUESTIONS, GIVE ASSIST RESPONSE CARD TO PATIENT

Question 1
(if completing follow-up please cross check the patient's answers with the answers given for Q1 at baseline. Any differences on this question should be queried)

In your life, which of the following substances have you ever used? *(NON-MEDICAL USE ONLY)*	No	Yes
a. Tobacco products (cigarettes, chewing tobacco, cigars, etc.)	0	3
b. Alcoholic beverages (beer, wine, spirits, etc.)	0	3
c. Cannabis (marijuana, pot, grass, hash, etc.)	0	3
d. Cocaine (coke, crack, etc.)	0	3
e. Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)	0	3
f. Inhalants (nitrous, glue, petrol, paint thinner, etc.)	0	3
g. Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)	0	3
h. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)	0	3
i. Opioids (heroin, morphine, methadone, codeine, etc.)	0	3
j. Other - specify:	0	3

Probe if all answers are negative:
"Not even when you were in school?"

If "No" to all items, stop interview.

If "Yes" to any of these items, ask Question 2 for each substance ever used.

Question 2

In the past three months, how often have you used the substances you mentioned *(FIRST DRUG, SECOND DRUG, ETC)*?	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
a. Tobacco products (cigarettes, chewing tobacco, cigars, etc.)	0	2	3	4	6
b. Alcoholic beverages (beer, wine, spirits, etc.)	0	2	3	4	6
c. Cannabis (marijuana, pot, grass, hash, etc.)	0	2	3	4	6
d. Cocaine (coke, crack, etc.)	0	2	3	4	6
e. Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)	0	2	3	4	6
f. Inhalants (nitrous, glue, petrol, paint thinner, etc.)	0	2	3	4	6
g. Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)	0	2	3	4	6
h. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)	0	2	3	4	6
i. Opioids (heroin, morphine, methadone, codeine, etc.)	0	2	3	4	6
j. Other - specify:	0	2	3	4	6

If "Never" to all items in Question 2, skip to Question 6.

If any substances in Question 2 were used in the previous three months, continue with Questions 3, 4 & 5 for each substance used.

Question 3

During the past three months, how often have you had a strong desire or urge to use *(FIRST DRUG, SECOND DRUG, ETC)*?	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
a. Tobacco products (cigarettes, chewing tobacco, cigars, etc.)	0	3	4	5	6
b. Alcoholic beverages (beer, wine, spirits, etc.)	0	3	4	5	6
c. Cannabis (marijuana, pot, grass, hash, etc.)	0	3	4	5	6
d. Cocaine (coke, crack, etc.)	0	3	4	5	6
e. Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)	0	3	4	5	6
f. Inhalants (nitrous, glue, petrol, paint thinner, etc.)	0	3	4	5	6
g. Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)	0	3	4	5	6
h. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)	0	3	4	5	6
i. Opioids (heroin, morphine, methadone, codeine, etc.)	0	3	4	5	6
j. Other - specify:	0	3	4	5	6

Question 4

During the **past three months**, how often has your use of *(FIRST DRUG, SECOND DRUG, ETC)* led to health, social, legal or financial problems?	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
a. Tobacco products (cigarettes, chewing tobacco, cigars, etc.)	0	4	5	6	7
b. Alcoholic beverages (beer, wine, spirits, etc.)	0	4	5	6	7
c. Cannabis (marijuana, pot, grass, hash, etc.)	0	4	5	6	7
d. Cocaine (coke, crack, etc.)	0	4	5	6	7
e. Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)	0	4	5	6	7
f. Inhalants (nitrous, glue, petrol, paint thinner, etc.)	0	4	5	6	7
g. Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)	0	4	5	6	7
h. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)	0	4	5	6	7
i. Opioids (heroin, morphine, methadone, codeine, etc.)	0	4	5	6	7
j. Other - specify:	0	4	5	6	7

Question 5

During the **past three months**, how often have you failed to do what was normally expected of you because of your use of *(FIRST DRUG, SECOND DRUG, ETC)*?	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
a. Tobacco products					
b. Alcoholic beverages (beer, wine, spirits, etc.)	0	5	6	7	8
c. Cannabis (marijuana, pot, grass, hash, etc.)	0	5	6	7	8
d. Cocaine (coke, crack, etc.)	0	5	6	7	8
e. Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)	0	5	6	7	8
f. Inhalants (nitrous, glue, petrol, paint thinner, etc.)	0	5	6	7	8
g. Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)	0	5	6	7	8
h. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)	0	5	6	7	8
i. Opioids (heroin, morphine, methadone, codeine, etc.)	0	5	6	7	8
j. Other - specify:	0	5	6	7	8

Ask Questions 6 & 7 for all substances ever used (i.e. those endorsed in Question 1)

Question 6

Has a friend or relative or anyone else ever expressed concern about your use of *(FIRST DRUG, SECOND DRUG, ETC.)*?	No, Never	Yes, in the past 3 months	Yes, but not in the past 3 months
a. Tobacco products (cigarettes, chewing tobacco, cigars, etc.)	0	6	3
b. Alcoholic beverages (beer, wine, spirits, etc.)	0	6	3
c. Cannabis (marijuana, pot, grass, hash, etc.)	0	6	3
d. Cocaine (coke, crack, etc.)	0	6	3
e. Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)	0	6	3
f. Inhalants (nitrous, glue, petrol, paint thinner, etc.)	0	6	3
g. Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)	0	6	3
h. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)	0	6	3
i. Opioids (heroin, morphine, methadone, codeine, etc.)	0	6	3
j. Other – specify:	0	6	3

Question 7

Have you ever tried and failed to control, cut down or stop using *(FIRST DRUG, SECOND DRUG, ETC.)*?	No, Never	Yes, in the past 3 months	Yes, but not in the past 3 months
a. Tobacco products (cigarettes, chewing tobacco, cigars, etc.)	0	6	3
b. Alcoholic beverages (beer, wine, spirits, etc.)	0	6	3
c. Cannabis (marijuana, pot, grass, hash, etc.)	0	6	3
d. Cocaine (coke, crack, etc.)	0	6	3
e. Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)	0	6	3
f. Inhalants (nitrous, glue, petrol, paint thinner, etc.)	0	6	3
g. Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)	0	6	3
h. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)	0	6	3
i. Opioids (heroin, morphine, methadone, codeine, etc.)	0	6	3
j. Other – specify:	0	6	3

Question 8

	No, Never	Yes, in the past 3 months	Yes, but not in the past 3 months
Have you ever used any drug by injection? *(NON-MEDICAL USE ONLY)*	0	2	1

IMPORTANT NOTE:

Patients who have injected drugs in the last 3 months should be asked about their pattern of injecting during this period, to determine their risk levels and the best course of intervention.

PATTERN OF INJECTING	INTERVENTION GUIDELINES
Once weekly or less or Fewer than 3 days in a row	→ Brief intervention including "risks associated with injecting" card
More than once per week or 3 or more days in a row	→ Further assessment and more intensive treatment*

HOW TO CALCULATE A SPECIFIC SUBSTANCE INVOLVEMENT SCORE.

For each substance (labelled a. to j.) add up the scores received for questions 2 through 7 inclusive. Do not include the results from either Q1 or Q8 in this score. For example, a score for cannabis would be calculated as: **Q2c + Q3c + Q4c + Q5c + Q6c + Q7c**

Note that Q5 for tobacco is not coded, and is calculated as: **Q2a + Q3a + Q4a + Q6a + Q7a**

THE TYPE OF INTERVENTION IS DETERMINED BY THE PATIENT'S SPECIFIC SUBSTANCE INVOLVEMENT SCORE

	Record specific substance score	no intervention	receive brief intervention	more intensive treatment *
a. tobacco		0 - 3	4 - 26	27+
b. alcohol		0 - 10	11 - 26	27+
c. cannabis		0 - 3	4 - 26	27+
d. cocaine		0 - 3	4 - 26	27+
e. amphetamine		0 - 3	4 - 26	27+
f. inhalants		0 - 3	4 - 26	27+
g. sedatives		0 - 3	4 - 26	27+
h. hallucinogens		0 - 3	4 - 26	27+
i. opioids		0 - 3	4 - 26	27+
j. other drugs		0 - 3	4 - 26	27+

NOTE: *FURTHER ASSESSMENT AND MORE INTENSIVE TREATMENT may be provided by the health professional(s) within your primary care setting, or, by a specialist drug and alcohol treatment service when available.

B. WHO ASSIST V3.0 RESPONSE CARD FOR PATIENTS

Response Card - substances

a. Tobacco products (cigarettes, chewing tobacco, cigars, etc.)
b. Alcoholic beverages (beer, wine, spirits, etc.)
c. Cannabis (marijuana, pot, grass, hash, etc.)
d. Cocaine (coke, crack, etc.)
e. Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)
f. Inhalants (nitrous, glue, petrol, paint thinner, etc.)
g. Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)
h. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)
i. Opioids (heroin, morphine, methadone, codeine, etc.)
j. Other - specify:

Response Card (ASSIST Questions 2 – 5)

Never: not used in the last 3 months

Once or twice: 1 to 2 times in the last 3 months.

Monthly: 1 to 3 times in one month.

Weekly: 1 to 4 times per week.

Daily or almost daily: 5 to 7 days per week.

Response Card (ASSIST Questions 6 to 8)

No, Never

Yes, but not in the past 3 months

Yes, in the past 3 months

C. ALCOHOL, SMOKING AND SUBSTANCE INVOLVEMENT SCREENING TEST (WHO ASSIST V3.0) FEEDBACK REPORT CARD FOR PATIENTS

Name_____ **Test Date** _____

Specific Substance Involvement Scores

Substance	Score	Risk Level
a. Tobacco products		0-3 Low 4-26 Moderate 27+ High
b. Alcoholic Beverages		0-10 Low 11-26 Moderate 27+ High
c. Cannabis		0-3 Low 4-26 Moderate 27+ High
d. Cocaine		0-3 Low 4-26 Moderate 27+ High
e. Amphetamine type stimulants		0-3 Low 4-26 Moderate 27+ High
f. Inhalants		0-3 Low 4-26 Moderate 27+ High
g. Sedatives or Sleeping Pills		0-3 Low 4-26 Moderate 27+ High
h. Hallucinogens		0-3 Low 4-26 Moderate 27+ High
i. Opioids		0-3 Low 4-26 Moderate 27+ High
j. Other - specify		0-3 Low 4-26 Moderate 27+ High

What do your scores mean?

Low:	You are at low risk of health and other problems from your current pattern of use.
Moderate:	You are at risk of health and other problems from your current pattern of substance use.
High:	You are at high risk of experiencing severe problems (health, social, financial, legal, relationship) as a result of your current pattern of use and are likely to be dependent

Are you concerned about your substance use?

a. tobacco	Your risk of experiencing these harms is:..... Low ☐ Moderate ☐ High ☐ (tick one) **Regular tobacco smoking is associated with:**
	Premature aging, wrinkling of the skin
	Respiratory infections and asthma
	High blood pressure, diabetes
	Respiratory infections, allergies and asthma in children of smokers
	Miscarriage, premature labour and low birth weight babies for pregnant women
	Kidney disease
	Chronic obstructive airways disease
	Heart disease, stroke, vascular disease
	Cancers

b. alcohol	Your risk of experiencing these harms is:..... Low ☐ Moderate ☐ High ☐ (tick one) **Regular excessive alcohol use is associated with:**
	Hangovers, aggressive and violent behaviour, accidents and injury
	Reduced sexual performance, premature ageing
	Digestive problems, ulcers, inflammation of the pancreas, high blood pressure
	Anxiety and depression, relationship difficulties, financial and work problems
	Difficulty remembering things and solving problems
	Deformities and brain damage in babies of pregnant women
	Stroke, permanent brain injury, muscle and nerve damage
	Liver disease, pancreas disease
	Cancers, suicide

c. cannabis	Your risk of experiencing these harms is:..... Low ☐ Moderate ☐ High ☐ (tick one) **Regular use of cannabis is associated with:**
	Problems with attention and motivation
	Anxiety, paranoia, panic, depression
	Decreased memory and problem solving ability
	High blood pressure
	Asthma, bronchitis
	Psychosis in those with a personal or family history of schizophrenia
	Heart disease and chronic obstructive airways disease
	Cancers

d. cocaine	Your risk of experiencing these harms is:.... Low ☐ Moderate ☐ High ☐ (tick one)
	Regular use of cocaine is associated with:
	Difficulty sleeping, heart racing, headaches, weight loss
	Numbness, tingling, clammy skin, skin scratching or picking
	Accidents and injury, financial problems
	Irrational thoughts
	Mood swings - anxiety, depression, mania
	Aggression and paranoia
	Intense craving, stress from the lifestyle
	Psychosis after repeated use of high doses
	Sudden death from heart problems

e. amphetamine type stimulants	Your risk of experiencing these harms is:..... Low ☐ Moderate ☐ High ☐ (tick one)
	Regular use of amphetamine type stimulants is associated with:
	Difficulty sleeping, loss of appetite and weight loss, dehydration
	jaw clenching, headaches, muscle pain
	Mood swings –anxiety, depression, agitation, mania, panic, paranoia
	Tremors, irregular heartbeat, shortness of breath
	Aggressive and violent behaviour
	Psychosis after repeated use of high doses
	Permanent damage to brain cells
	Liver damage, brain haemorrhage, sudden death (ecstasy) in rare situations

f. inhalants	Your risk of experiencing these harms is:..... Low ☐ Moderate ☐ High ☐ (tick one)
	Regular use of inhalants is associated with:
	Dizziness and hallucinations, drowsiness, disorientation, blurred vision
	Flu like symptoms, sinusitis, nosebleeds
	Indigestion, stomach ulcers
	Accidents and injury
	Memory loss, confusion, depression, aggression
	Coordination difficulties, slowed reactions, hypoxia
	Delirium, seizures, coma, organ damage (heart, lungs, liver, kidneys)
	Death from heart failure

g. sedatives	Your risk of experiencing these harms is: Low ☐ Moderate ☐ High ☐ (tick one)
	Regular use of sedatives is associated with:
	Drowsiness, dizziness and confusion
	Difficulty concentrating and remembering things
	Nausea, headaches, unsteady gait
	Sleeping problems
	Anxiety and depression
	Tolerance and dependence after a short period of use.
	Severe withdrawal symptoms
	Overdose and death if used with alcohol, opioids or other depressant drugs.

h. hallucinogens	Your risk of experiencing these harms is:..... Low ☐ Moderate ☐ High ☐ (tick one)
	Regular use of hallucinogens is associated with:
	Hallucinations (pleasant or unpleasant) – visual, auditory, tactile, olfactory
	Difficulty sleeping
	Nausea and vomiting
	Increased heart rate and blood pressure
	Mood swings
	Anxiety, panic, paranoia
	Flash-backs
	Increase the effects of mental illnesses such as schizophrenia

i. opioids	Your risk of experiencing these harms is: Low ☐ Moderate ☐ High ☐ (tick one)
	Regular use of opioids is associated with:
	Itching, nausea and vomiting
	Drowsiness
	Constipation, tooth decay
	Difficulty concentrating and remembering things
	Reduced sexual desire and sexual performance
	Relationship difficulties
	Financial and work problems, violations of law
	Tolerance and dependence, withdrawal symptoms
	Overdose and death from respiratory failure

D. RISKS OF INJECTING CARD – INFORMATION FOR PATIENTS

Using substances by injection increases the risk of harm from substance use.

This harm can come from:

- **The substance**
  - If you inject any drug you are more likely to become dependent.
  - If you inject amphetamines or cocaine you are more likely to experience psychosis.
  - If you inject heroin or other sedatives you are more likely to overdose.
- **The injecting behaviour**
  - If you inject you may damage your skin and veins and get infections.
  - You may cause scars, bruises, swelling, abscesses and ulcers.
  - Your veins might collapse.
  - If you inject into the neck you can cause a stroke.
- **Sharing of injecting equipment**
  - If you share injecting equipment (needles & syringes, spoons, filters, etc.) you are more likely to spread blood borne virus infections like Hepatitis B, Hepatitis C and HIV.

❖ **It is safer not to inject**

❖ **If you do inject:**

- ✓ always use clean equipment (e.g., needles & syringes, spoons, filters, etc.)
- ✓ always use a new needle and syringe
- ✓ don't share equipment with other people
- ✓ clean the preparation area
- ✓ clean your hands
- ✓ clean the injecting site
- ✓ use a different injecting site each time
- ✓ inject slowly
- ✓ put your used needle and syringe in a hard container and dispose of it safely

❖ **If you use stimulant drugs like amphetamines or cocaine the following tips will help you reduce your risk of psychosis.**

- ✓ avoid injecting and smoking
- ✓ avoid using on a daily basis

❖ **If you use depressant drugs like heroin the following tips will help you reduce your risk of overdose.**

- ✓ avoid using other drugs, especially sedatives or alcohol, on the same day
- ✓ use a small amount and always have a trial "taste" of a new batch
- ✓ have someone with you when you are using
- ✓ avoid injecting in places where no-one can get to you if you do overdose
- ✓ know the telephone numbers of the ambulance service

E. TRANSLATION AND ADAPTATION TO LOCAL LANGUAGES AND CULTURE: A RESOURCE FOR CLINICIANS AND RESEARCHERS

The ASSIST instrument, instructions, drug cards, response scales and resource manuals may need to be translated into local languages for use in particular countries or regions. Translation from English should be as direct as possible to maintain the integrity of the tools and documents. However, in some cultural settings and linguistic groups, aspects of the ASSIST and it's companion documents may not be able to be translated literally and there may be socio-cultural factors that will need to be taken into account in addition to semantic meaning. In particular, substance names may require adaptation to conform to local conditions, and it is also worth noting that the definition of a standard drink may vary from country to country.

Translation should be undertaken by a bi-lingual translator, preferably a health professional with experience in interviewing. For the ASSIST instrument itself, translations should be reviewed by a bi-lingual expert panel to ensure that the instrument is not ambiguous. Back translation into English should then be carried out by another independent translator whose main language is English to ensure that no meaning has been lost in the translation. This strict translation procedure is critical for the ASSIST instrument to ensure that comparable information is obtained wherever the ASSIST is used across the world.

Translation of this manual and companion documents may also be undertaken if required. These do not need to undergo the full procedure described above, but should include an expert bi-lingual panel.

Before attempting to translate the ASSIST and related documents into other languages, interested individuals should consult with the WHO about the procedures to be followed and the availability of other translations. Write to the Department of Mental Health and Substance Dependence, World Health Organisation, 1211 Geneva 27, Switzerland.

APPENDIX F

PRE-EDUCATION SELF-REPORTED CONFIDENTIAL SURVEY

Please answer the following question based on a 0-10 liker scale based on your experience in the ER. (0-3 being rarely, 4-7 being sometimes, 8-10 being most of the time) Please **do not** write your name, as this is a confidential, self-reported survey.

1) When triaging patients, I *ask* them about tobacco use (smoking).

   0-1-2-3-4-5-6-7-8-9-10

2) When patients verbalize that they smoke tobacco, I *advise* them to quit.

   0-1-2-3-4-5-6-7-8-9-10

3) After tobacco use has been established I *assess* for readiness to quit.

   0-1-2-3-4-5-6-7-8-9-10

4) When patients verbalize willingness to quit, I *assist* them with the process.

   0-1-2-3-4-5-6-7-8-9-10

5) I *arrange* for follow up in the community through resources such as quit lines and smoking cessation group classes.

   0-1-2-3-4-5-6-7-8-9-10

6) I assess based on the amount of tobacco use daily by a patient what level of intervention I need to provide as a nurse.

   0-1-2-3-4-5-6-7-8-9-10

7) I recommend pharmacological agents for patients who are trying to stop smoking tobacco.

0-1-2-3-4-5-6-7-8-9-10

8) I provide patients who smoke tobacco information from AHEC to assist them with the process of smoking cessation.

   0-1-2-3-4-5-6-7-8-9-10

9) I regularly use the five As approach with patients during the triage interview

   0-1-2-3-4-5-6-7-8-9-10

APPENDIX G

POST-EDUCATION SELF-REPORTED CONFIFDENTIAL SURVEY

☐ Check the box if you attended the educational session.

Please answer the following question based on a 0-10 liker scale based on your experience in the ER. (0-3 being rarely, 4-7 being sometimes, 8-10 being most of the time) Please **do not** write

your name, as this is a confidential, self-reported survey.

1) When triaging patients, I *ask* them about tobacco use (smoking).

   0-1-2-3-4-5-6-7-8-9-10

2) When patients verbalize that they smoke tobacco, I *advise* them to quit.

   0-1-2-3-4-5-6-7-8-9-10

3) After tobacco use has been established, I *assess* for readiness to quit.

   0-1-2-3-4-5-6-7-8-9-10

4) When patients verbalize willingness to quit, I *assist* them with the process.

   0-1-2-3-4-5-6-7-8-9-10

5) I *arrange* for follow up in the community through resources such as quit lines and smoking cessation group classes.

   0-1-2-3-4-5-6-7-8-9-10

6) I assess based on the amount of tobacco use daily by a patient what level of intervention I need to provide as a nurse.

0-1-2-3-4-5-6-7-8-9-10

7) I recommend pharmacological agents for clients who are trying to stop smoking tobacco.

   0-1-2-3-4-5-6-7-8-9-10

8) I provide patients who smoke tobacco information from AHEC to assist them with the process of smoking cessation.

   0-1-2-3-4-5-6-7-8-9-10

9) I regularly use the five As approach with patients during the triage interview.

   0-1-2-3-4-5-6-7-8-9-10

APPENDIX H

BARRY UNIVERSITY COVER LETTER

Dear Emergency Department Registered Nurse:

Your voluntary participation in a project is requested. The title of the project is "Implementation of a Smoking Cessation Program in the Emergency Department". This project is being conducted by Juan M Gonzalez, a student in the DNP program at Barry University, and is seeking information that will be useful in nursing. The purpose of the project is to increase smoking cessation education and referral by ED RNs for at risk patients being discharged from the emergency department.

A two-hour voluntary educational program will be presented by Juan Gonzalez in the South Miami Hospital ED Conference Room. Before this program begins you will be asked to complete a self-reported confidential survey regarding your current practices in assessment and referral for at risk patients related to smoking cessation. The remainder of the time the investigator will present a nationally recognized educational program on tobacco cessation strategies. The time requirement for the initial survey and class is two hours.

Two weeks after the educational program, Juan M Gonzalez will hand deliver a post educational self-reported confidential survey to you and ask you to take 15 minutes to complete it. After the survey is completed, you are asked to place it in a blank envelope provided by the investigator. You are asked to deposit the completed survey in a drop box located in the ED conference room within 1 week of receipt. The investigator will remove the box (1 week after delivery date) and collect all surveys and maintain them in a locked file in his home office. Your total time commitment for this project will be 2 hours and 15 minutes. We anticipate the number of ED nurse participants will not exceed 80.

If you decide to participate in this project, all information you provide will be kept confidential, that is, no names or other identifiers will be collected on any of the instruments used. Data will be kept in a locked file in the researcher's office. You may decline to participate or withdraw at any time without negative consequences.

There are no risks involved in the participation of this project. There are no direct benefits to you for participating in this project.

If you have any questions or concerns regarding the project, or your participation in the project, you may contact me, Juan M Gonzalez, at [redacted], my supervisor, Dr. LePage at [redacted], or the Institutional Review Board contact, Barbara Cook, at [redacted]

Thank you for your participation.

Sincerely,
Juan M Gonzalez, RN

APPENDIX I

FLYER

YOU ARE INVITED TO PARTICIPATE IN A BARRY UNIVERSITY

DNP CAPSTONE PROJECT

Education sessions will take place on scheduled dates from 7-9 am and 7-9 pm in the ED conference room. Sessions are 2 hours and will address information on how to screen and provide smoking

Project Estimated to Go Live October 2013

At South Miami Emergency Department

Any concerns regarding your rights? You may contact my supervisor Dr. Carolyn LePage [redacted], the Institutional Review Board point of contact Barbara Cook [redacted] or myself at

APPENDIX J

PRE AND POST SCRIPTING

Pre-Survey Period – Day, Pre-education, & Night Script

Hi, My name is: Juan Gonzalez. I am conducting a research project to obtain some information from nurses about tobacco use screening, education about cessation, and referral in the Emergency Department. This study is part of my Doctor of Nursing Practice journey. You will notice that I have put up flyers over this week and will be passing out the study survey packets today if you are interested in participating. We have placed a collection box for the sealed envelope in the lounge. Survey packets will also be kept next to the collection box in the staff lounge until X. Please note that surveys are anonymous.

Please consider participating in our study entitled, "Implementation of a Smoking Cessation Education Program in the Emergency Department". If you have any questions about the study, please contact the Principal Investigator, Juan M Gonzalez, myself, or the IRB Clinical Research Manager, Maria Arnold, or Shakira Henderson, SMH Research Specialist. Our contact information is on the cover letter in the study packets.

When script is read right before the pre-educational session, the following will be added:

I am going to step out of the room for 15 minutes so you can read the cover letter and decide on filling out the survey. Please place your sealed envelope in the collection box.

Post- Survey Period – Day & Night Script

Hi, My name is: Juan Gonzalez. I am conducting a research project to obtain some information from nurses about tobacco use screening, education about cessation, and referral in the Emergency Department. This study is part of my Doctor of Nursing Practice journey. You may remember the pre-survey 2 weeks ago. Thank you to those of you who participated. We are now doing a post-survey since the smoking cessation educational intervention was conducted on X. I have survey packets for anyone who is interested in doing the post-survey and we have placed a collection box for the sealed envelope in the lounge. Survey packets will also be kept next to the collection box in the staff lounge until X. Please note that surveys are anonymous.

Please consider participating in our study entitled, "Implementation of a Smoking Cessation Education Program in the Emergency Department". If you have any questions about the study, please contact the Principal Investigator, Juan M Gonzalez, myself, or the IRB Clinical Research Manager, Maria Arnold, or Shakira Henderson, SMH Research Specialist. Our contact information is on the cover letter in the study packets.

APPENDIX K

DATA AUDIT TOOL

Question Number Asked	Number Who Answered Rarely (0-3)	Number Who Answered Some Times (4-7)	Number Who Answered most of the time (8-10)
Question 1			
Question 2			
Question 3			
Question 4			
Question 5			
Question 6			
Question 7			
Question 8			
Question 9			

APPENDIX L

AHEC REFERRAL FORM

Miami-Dade Area Health Education Center
Tobacco Program
1200 N.W. 78th Avenue, Suite 209
Doral, Florida 33126
(305) 597-3640
FAX: (305) 592-3704
www.mdahec.org/quitnow

Tobacco Cessation Support Referral Form

Please complete by circling or writing in your answers.

Do you smoke your first cigarette within 30 minutes of waking up?	Yes	No
Would it be harder for you to give up your first cigarette in the morning than any other one during the day?	Yes	No
Is it hard to keep from smoking in places where you are not supposed to? (Examples: hospitals, airplanes, stores.)	Yes	No
How many cigarettes per day do you smoke?	_____ write number	
Do you smoke more when you first wake up than during the rest of the day?	Yes	No
Do you wake up in the middle of the night to have a cigarette?	Yes	No
Do you smoke even when you are sick?	Yes	No
Have you ever tried to quit smoking in the past?	Yes	No
Are you interested in just talking to someone about maybe quitting smoking?	Yes	No
Do you want to quit smoking?	Yes	No

Name: _____ Phone Number: _____

Mailing address: _____
Street Apt.

_____
City State Zip Code

E-mail: _____

I give permission to Miami-Dade AHEC's Smoking Cessation Program to contact me to offer free smoking cessation assistance? _____ YES _____ NO

Signature: _____ The best time to contact me is: _____

Please return form to Miami-Dade AHEC

Referral Source: _____

Miami-Dade Area Health Education Center
Programa Contra el Tabaco
1200 N.W. 78th Avenue, Suite 209
Doral, Florida 33126
(305) 597-3640
FAX: (305) 592-3704
www.mdahec.org/quitnow

Formulario para Solicitud de Apoyo para dejar de Fumar

¿Fuma usted su primer cigarrillo durante los primeros 30 minutos después de haberse levantado?	Sí	No
¿Piensa usted que dejar de fumar el primer cigarrillo de la mañana sería más difícil que dejar de fumar cualquier otro durante el día?	Sí	No
¿Se le hace difícil abstenerse de fumar en lugares que no está permitido, como hospitales, aviones, etc.....?	Sí	No
¿Cuantos cigarrillos de fuma usted diariamente?	_____ numero	
¿Se levanta en medio de la noche a fumarse un cigarrillo?	Sí	No
¿Fuma usted aún cuando está enfermo?	Sí	No
¿Ha intentado dejar de fumar en el pasado?	Sí	No
¿Está usted interesado en conversar con alguien acerca de la posibilidad de dejar de fumar?	Sí	No
¿Quiere usted dejar de fumar?	Sí	No

Nombre: _____ Número Telefónico: _____

Dirección: _____
Calle Apto.

_____
Ciudad Estado Código Postal

Correo Electrónico: _____

Autorizo al Programa para Dejar de Fumar de Miami-Dade AHEC (Miami-Dade AHEC's Smoking Cesación Program) a contactarme para ofrecerme asistencia gratuita para dejar de fumar.

_____Sí _____NO

Signatura: _____ La mejor hora para contactarme es: _____

Favor devolver este formulario a Miami-Dade AHEC

Fuente de Remisión: _____

APPENDIX M

EDUCATIONAL INTERVENTION

Title: Implementation of Smoking Cessation Education Program in the Emergency Department

Description: This is a one- to two-hour PowerPoint presentation to educate emergency department staff about tobacco use among ED patients, identify how to screen for tobacco use, assist patients with quitting, and address how to refer patients to outside community resources.

Learning Objectives	**Contents**	**Method**	**References**
Learning Objectives At the completion of each session the	See Below	Instructor-led Power Point or Printed Material	American Lung Association (2008). Chronic obstructive pulmonary disease. Retrieved from http://www.lung.org/lung-disease/copd/ Au, D. H., Bryson, C. L., Chien, J. W., Sun, H., Udris, E. M., Evans, L. E., & Bradley, K. A. (2009). The effects of smoking cessation on the risk of chronic obstructive pulmonary disease exacerbations. *Journal of General Internal Medicine, 24*(4), 457-463. doi:10.1007/s11606-009-0907-y Betobaccofree.gov (2013, August). *Effects of smoking on your health*. Retrieved November 25, 2013, from http://betobaccofree.hhs.gov/health-effects/smoking-health/index.html#lungs

participant will be able to: 1. State at least two short- and long-term health complications of smoking tobacco. 2. Describe the impact of quitting. 3. Describe pathophysiology behind nicotine addiction. 4. List impact that health care providers have on patients' ability to quit. 5. Describe at			Centers for Disease Control and Prevention. (2011, January). Chronic obstructive pulmonary disease. Retrieved from http://www.cdc.gov/copd/ Forey, B. A., Thornton, A. J., & Lee, P. N. (2011). Systematic review with meta-analysis of the epidemiological evidence relating smoking to COPD, chronic bronchitis and emphysema. *BMC Pulmonary Medicine, 11*(36), 1-61. Retrieved from http://www.biomedcentral.com/1471-2466/11/36 Healthy People. (2012f, February). 2020 Topics and objectives: Tobacco use. Retrieved from http://healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicd=41 Substance Abuse and Mental Health Services Administration. (2012, March). *Screening, brief intervention, and referral to treatment*. Retrieved from http://www.samhsa.gov/prevention/SBIRT/

least two common reasons providers do not provide smoking cessation education. 6. Describe and apply the five As approach when providing smoking cessation education. 7. Describe what is motivational interviewing and how to apply it when educating patients. 8. List one quit line number that can be given to patients when			

assisting to quit. 9. Describe information about electronic cigarettes and hookahs. 10. Verbalize the steps that needed when referring a patient to Area Health Education Centers (AHEC). 11. To document utilizing the computerized system smoking cessation education and referral of patients.			
Introduction	• Introduction to smoking tobacco	Instructor-led Power	American Lung Association (2008). Chronic obstructive pulmonary disease. Retrieved from http://www.lung.org/lung-disease/copd/

	• Statistics • Overview of four leading causes of death in the USA	Point or Printed Material	Betobaccofree.gov (2013, August). *Effects of smoking on your health*. Retrieved November 25, 2013, from http://betobaccofree.hhs.gov/health-effects/smoking-health/index.html#lungs Centers for Disease Control and Prevention. (2011, January). Chronic obstructive pulmonary disease. Retrieved from http://www.cdc.gov/copd/
Objective 1. Health complications of smoking tobacco.	Health complications of smoking • Heart disease • Stroke • Cancers • Lung diseases	Instructor-led Power Point or Printed Material	American Lung Association (2008). Chronic obstructive pulmonary disease. Retrieved from http://www.lung.org/lung-disease/copd/ Betobaccofree.gov (2013, August). *Effects of smoking on your health*. Retrieved November 25, 2013, from http://betobaccofree.hhs.gov/health-effects/smoking-health/index.html#lungs Centers for Disease Control and Prevention. (2011, January). Chronic obstructive pulmonary disease. Retrieved from http://www.cdc.gov/copd/ U.S Department Of Health & Human Services (2009). *Healthy people 2020: The road ahead*. Retrieved from http://www.healthypeople.gov/hp2020/
Objective 2. Impact of quitting.	Impact of quitting on patients • 48 hours- ability to smell and taste	Instructor-led Power Point or Printed Material	Betobaccofree.gov (2013, August). *Effects of smoking on your health*. Retrieved November 25, 2013, from http://betobaccofree.hhs.gov/health-effects/smoking-health/index.html#lungs

	• 2-3 months-walking becomes easier • 1-9 months-body's overall energy increases • 1 year-excess risk for coronary heart disease is half that of a smoker • 5 years-lung cancer death rate decreases by almost half • 10 years-risk of cancer of the mouth, throat, esophagus, bladder, kidney, cervix and pancreas decreases • 15 years-risk of coronary heart disease is that of a non-smoker		
Objective 3. Patho behind nicotine	• Definition of addiction • Neurotransmitters released when	Instructor-led Power Point or Printed	National Institute on Drug Abuse. (2011). Tobacco addiction. Retrieved from http://www.drugabuse.gov/drugs-abuse/tobacco-addiction-nicotine

addiction.	inhaling nicotine • Relation of those neurotransmitters with other pleasurable activities	Material	
Objective 4. Impact of health care providers on patients' ability to quit.	• Impact health care providers have on patients • Percent of patients who quit without assistance • Length of times it takes them • Percent of patients who quit with providers assistance • Length of time it takes them • Significance of this for ED nurses	Instructor-led Power Point or Printed Material	Betobaccofree.gov (2013, August). *Effects of smoking on your health*. Retrieved November 25, 2013, from http://betobaccofree.hhs.gov/health-effects/smoking-health/index.html#lungs Centers for Disease Control and Prevention. (2011, January). Chronic obstructive pulmonary disease. Retrieved from http://www.cdc.gov/copd/ Miami Dade Area Health Education Centers (2011) Helpful resources. Retrieved from: http://www.mdahec.org/CessationHelpful.asp
Objective 5 Describe at least two common reasons providers do not provide	Common reasons health care providers list that prevent them from teaching about tobacco use and cessation • Too busy • Lack of expertise	Instructor-led Power Point or Printed Material	Betobaccofree.gov (2013, August). *Effects of smoking on your health*. Retrieved November 25, 2013, from http://betobaccofree.hhs.gov/health-effects/smoking-health/index.html#lungs

smoking cessation education	or knowledge about smoking cessation • No financial incentive • Do not want to seem judgmental • May not be relevant at the moment • Negative message may prevent patients from returning • Health professionals smoke		AAFP
Objective 6. Describe and apply the five As/Five Rs approach when providing smoking cessation education.	Five As approach • Assess • Advice • Assess readiness • Assist • Arrange Five Rs approach • Relevance	Instructor-led Power Point or Printed Material	U.S. Department of Health and Human Services (2013) http://www.ahrq.gov/professionals/clinicians-providers/guidelines-recommendations/tobacco/5rs.html Miami Dade Area Health Education Center (2011). How it works. Retrieved from http://www.mdahec.org/CessationHowWork.asp

	• Risk • Rewards • Roadblocks • Repetition		
Objective 7. Describe what is motivational interviewing and how to apply it when educating patients.	Educational interviewing • Definition • Do's and don'ts • Open ended questions • Listen • Reflect • Elicit patients own motivations • Affirmation • Summary of statements	Instructor-led Power Point or Printed Material	Miami Dade Area Health Education Center (2011) Retrieved from http://www.mdahec.org
Objective 8. List one quit line number that can be given to patients when assisting to quit	Quit lines through Tobacco Free Florida • 1-800 Quit Now (1-800- 784-8669) • 1-877 U Can Now (1-877-822-6669)	Instructor-led Power Point or Printed Material	Miami Dade Area Health Education Center (2011). Resources. Retrieved from http://www.mdahec.org/Links.asp?mn=8&sm=8-1 American Lung Association (2008). Chronic obstructive pulmonary disease. Retrieved from http://www.lung.org/lung-disease/copd/

Objective 9. Describe information about electronic cigarettes.	Electronic cigarette • Definition • Long term impact • Effect of nicotine from these devices • Recommendations Hookahs • Tobacco content • Long health risk of tobacco inhalation • Difference between tobacco and regular cigarettes • Public misconceptions	Instructor-led Power Point or Printed Material	National Institute on Drug Abuse. (2011). Tobacco addiction. Retrieved from http://www.drugabuse.gov/drugs-abuse/tobacco-addiction-nicotine
Objective 10. Verbalize the steps that needed when referring a patient to Area Health Education Centers	Steps to refer patients to AHEC • Follow the five As and Rs • If patient ready and willing to quit fill out form	Instructor-led Power Point or Printed Material	Miami Dade Area Health Education Center (2011). Provider resources. Retrieved from http://www.mdahec.org/ProviderResources.asp?mn=2&sm=2-1

(AHEC).	• Fax form to AHEC • AHEC will call patient to assist with quitting process • Counseling and pharmacological resources provided by AHEC		
Objective 11. To document utilizing the computerized system smoking cessation education and referral of patients	Documentation of smoking cessation and referral • Click on discharge tab • Click smoking education • In sub-menu click materials, counseling and referral as applicable	Instructor-led Power Point or Printed Material	No resource.