Rutgers DNP Project to Accompany

THE DNP PROJECT WORKBOOK

A Step-by-Step Process for Success

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A DNP PROJECT

Standardizing Smoking Cessation Intervention for Patients in an Acute Care Setting

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Rutgers, The State University of New Jersey

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In partial fulfillment of the requirements

For the Degree of Doctor of Nursing Practice

By

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Dedication

To my loving husband who stood by me every step of the way, believing in me and more importantly helping me believe in myself. I can never thank you enough for the countless hours you spent reading, editing, and discussing every aspect of this project with me. You are my light on the darkest days and one of the best things in my life. I love you and I thank you.

To my parents who have been supporting my dreams my entire life. Thank you for instilling in me the love of reading and learning at such a young age. We've come a long way from story time on warm spring days or practicing math problems with crayons but your love and belief in me has always been a constant present in my life. I could not have achieved this dream without you.

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Standardizing Smoking Cessation Intervention for Patients in an Acute Care Setting

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Abstract

Smoking is the number one cause of preventable death. Smoking cessation counseling has been identified as the most effective preventative care service offered, however there is still inconsistency or complete omission in the delivery of cessation counseling services. The hospital setting provides a unique opportunity for providers to offer these services due to increased exposure to the patient and family with added regulations that restrict smoking while admitted. The main aims of this project were to improve smoking cessation among hospitalized patients and to increase nurse awareness and adherence to carrying out evidence-based smoking cessation counseling to hospitalized patients. This quality improvement project consisted of a didactic program offered to all day shift nurses instructing them on the new *5 A's* protocol supplemented with badge cards and other resources for continued enforcement. Key results included statistical significant reported frequency of ask (p=0.028), advise (p=0.016), assess (p=0.005), and assist (p=0.003) steps in the *5 A's* protocol and increased reported nurse preparedness in carrying out smoking counseling (p=0.04). Numerical increases were also found in number of nicotine replacement orders (11% to 16%) and care plan documentation post-intervention (0% to 16%). This project helps to stress the importance of hospitals implementing a standardized smoking cessation program and offering additional training and resources to ensure increased frequency in staff carrying out these services.

Keywords: smoking cessation, hospitalized patients, nurses, *5 A's*.

Standardizing Smoking Cessation Intervention for Patients in an Acute Care Setting

Introduction

Smoking tobacco is linked to a variety of health problems including multiple types of cancer, lung disease, and cardiovascular disease. Smoking is identified by the Centers for Disease Control and Prevention (CDC) as the continued leading cause of preventable death (Patel & Steinberg, 2016). The US Preventative Services Task Force has rated smoking cessation counseling as the number one most effective preventative care service (Lemaire, Bailey, & Leischow, 2015). The CDC reports that nationally only four to six percent of smokers are successful in quitting each year and more than one-half of patients hospitalized for cardiac problems will continue to smoke once they are discharged (Center for Disease Control and Prevention, 2017b; de Hoog et al., 2016). Hospitalization has been identified as a golden opportunity to stress the importance of smoking cessation (Kazemzadeh, Manzari, & Pouresmail, 2016). However, due to the high rates of continued smoking following discharge, the need for smoking cessation quality improvement is evident (Dawood et al., 2008).

The purpose of this project is to address the lack of consistency in smoking cessation education within a hospital setting. A lack of structure and guidelines within a hospital setting leaves room for the omission of or varying approaches to tobacco cessation interventions. Targeting hospitalized patients offers the unique opportunity of addressing this problem while patients are not allowed to actively smoke, due to hospital policy (Kazemzadeh et al., 2016). Utilizing front line nursing staff in the delivery of smoking cessation counseling provides the opportunity to optimize staff that are already exposed to patients for long periods of time.

Background

The CDC estimated 480,000 premature deaths occurring from smoking as well as $289 billion going towards health care costs and losses in productivity (Patel & Steinberg, 2016). Smoking is attributed to many health conditions including those that cause frequent readmissions such as COPD, uncontrolled diabetes, cancer, asthma and coronary artery disease which can impact a hospital's reimbursement (Patel & Steinberg, 2016). The all-cause mortality in smokers compared to non-smokers is three to five times greater (Center for Disease Control and Prevention, 2017b). Yearly, Medicare and Medicaid expenditures are approximately $85 billion, while other federal government programs contribute $23.8 billion (Xu, Bishop, Kennedy, Simpson, & Pechacek, 2015). Additionally, private health insurance company costs are also largely impacted by smoking related diseases (Xu et al., 2015).

Health Risks

As research continues to develop, more health problems are being causally linked with smoking. Nearly all body systems are effected by smoking, causing a variety of disease states (National Center for Chronic Disease, 2014). Even brief exposure to tobacco smoke can cause both acute and chronic cardiac conditions. There is sufficient evidence that nicotine, an ingredient found within cigarettes, activates multiple biological pathways which increases risk for disease in those who consume it. Nicotine has also been found to adversely affect fetal and adolescent brain development upon exposure. Cancer risk has also been causally linked to nicotine exposure (National Center for Chronic Disease, 2014).

Smoking has been found as the dominant cause of COPD, and smoking is attributable to all elements of COPD including emphysema and airway damage. Asthma exacerbation and recurrent tuberculosis are also linked to current smoking status (National Center for Chronic Disease, 2014). The cardiovascular system is strongly impacted by smoking; 17.1% of

congestive heart failure cases can be attributed to tobacco use. The CDC estimates there are 3.5 million patients living with cardiovascular disease because of direct or indirect cigarette smoke exposure (National Center for Chronic Disease, 2014).

Smoking cigarettes has been identified as a cause of diabetes and the prevalence of diabetes has been increasing. Development of diabetes is 30-40% more likely in current smokers than non-smokers. Between 2010 and 2014, 13% of diabetic related deaths were made up of current and former smokers (National Center for Chronic Disease, 2014). Other medical conditions such as macular degeneration, dental caries, Crohn's disease, and ulcerative colitis, have evidence suggesting a causal relationship with cigarette smoking. Ingredients found within cigarette smoke have been found to impact the immune system. This can lead to smokers experiencing an increased risk for immune-mediated disorders (National Center for Chronic Disease, 2014).

Overall, health status is diminished while a person is an active smoker. It has been identified that relative risk of dying from cigarette smoke has increased in both men and women in the United States over the past 50 years (National Center for Chronic Disease, 2014).

Secondhand Smoke

Direct smokers are not the only ones affected by smoking. Second-hand inhalation of tobacco smoke has also been linked to more than 7,300 deaths from cancer and 34,000 deaths from coronary artery disease per year (Patel & Steinberg, 2016). Diseases that affect the cardiovascular and respiratory system, in addition to cancer have been casually linked to second hand smoke (National Center for Chronic Disease, 2014).

Women who continue to smoke while pregnant are at higher risk for experiencing a preterm labor and delivering a baby with low birth weight (Patel & Steinberg, 2016). A mother

who smokes during pregnancy places the infant at higher risk for sudden infant death syndrome. As they continue to age, these children have been found to have a higher risk of asthma, chronic otitis media and other respiratory complications (Patel & Steinberg, 2016).

Health Benefits from Quitting

Health benefits from smoking cessation begin within seconds and continue to accumulate over years (Patel & Steinberg, 2016). These benefits can be yielded by any smoker, regardless of the length of time they have used tobacco products (Kazemzadeh et al., 2016). Symptoms developed from cigarette smoking such as high blood pressure, high carbon monoxide levels, decreased stamina, and decreased smell and taste can improve within minutes to days of stopping smoking (Patel & Steinberg, 2016).

Smoking cessation has been identified as the most effective and efficient secondary prevention for patients suffering from cardiovascular disease (Smith & Burgess, 2009). If a patient with cardiovascular disease quits smoking, he or she can benefit from up to a 32% risk reduction for nonfatal myocardial infarctions. Cessation can also reduce risk of reinfarction, cardiac death, and total mortality in patients by 50%, if quitting takes place after the first myocardial infarction (Shishani, Sohn, Okada, & Froelicher, 2009). The same risk reduction can be seen in multiple types of cancer and stroke. The risk for stroke can reach about the same level as nonsmokers after two to five years of quitting smoking (Center for Disease Control and Prevention, 2017a). Mouth, throat, esophagus and bladder cancers can have a risk reduction of 50% after five years of quitting (Patel & Steinberg, 2016). If a patient quits before the age of 40, his or her risk reduction in smoking related motility is 90% (Patel & Steinberg, 2016).

Benefits in the pulmonary system can be seen shortly after cessation. Within two to four weeks respiratory infections can decrease and within four to twelve weeks there is an overall

improvement in lung function (Patel & Steinberg, 2016). The risk of developing lung cancer can be reduced to half by ten years of smoking abstinence (Center for Disease Control and Prevention, 2017a). Ultimately, the strategy to quit smoking is a direct attempt to prevent death (Kazemzadeh et al., 2016).

Current Plans to Decrease Use

National initiatives to decrease tobacco use include increasing tobacco prices and taxes, initiating smoke free polices, and supporting smoke free media campaigns. On the state level, state based quitlines are utilized along with additional community outreach efforts. The CDC stresses the large reach that quitlines can impact and urge states to utilize different strategies to increase quitline awareness and use. Despite the usefulness quitlines may hold, it has been found that these efforts only reach about 1% of smokers a year (Center for Disease Control and Prevention, 2014).

Multiple studies have been performed examining the best way to help smokers quit, from behavioral counseling to offering pharmacotherapy, or through a combination of multiple approaches. Patients have been found to be twice as likely to quit smoking when offered short counseling by a provider than those patients who do not (Chaney & Sheriff, 2012). There are still many patients that report not receiving any assistance to quit from their providers (Patel & Steinberg, 2016).

The *5 A's* strategy has been endorsed by both the CDC and American College of Physicians as the standard of smoking cessation counseling (Center for Disease Control and Prevention, 2014; Patel & Steinberg, 2016). This method requires the provider to ask about smoking status, advise the patient to quit, assess the patient's readiness, assist in cessation, and arrange for follow up to monitor progress at every patient encounter. To enhance adherence to

this strategy organizations such as the Centers for Medicaid and Medicare Services, The Joint Commission, and the National Committee for Quality Assurance require reporting smoking cessation as a quality measure (Centers for Medicaid & Medicare Services, 2016; National Committee for Quality Assurance, 2016; The Joint Commission, 2016). This is often built into electronic documentation systems to track if patients are screened for smoking status. These systems cue practitioners to screen for smoking status and can prompt the discussion about quitting. It is an indicator often selected for Meaningful Use (Centers for Medicaid & Medicare Services, 2014).

Simple advice from a physician can aid in cessation, but more successful programs have an increased duration and frequency of contact with the patient (Barth, Critchley, & Bengel, 2006). Additionally, studies indicate that interventions are more successful in achieving abstinence when provided while the patient is still in the hospital (Reid, Mullen, & Pipe, 2011). More comprehensive interventions including behavior counseling, pharmacotherapy and follow up have been found to be more effective than any one intervention alone (Park, Lee, & Oh, 2015) Patients receiving psychosocial counseling were twice as likely to quit when compared to controls who received no counseling (Barth et al., 2006). This calls for a review and revision of current smoking cessation education provided within hospitals.

Studies have also reviewed reasons for failure among smoking cessation interventions. Lack of motivation, training, and structure have been found to be major problems in successful implementation of smoking cessation interventions (Raupach et al., 2014). This leaves room for improvement by providing education to front line staff on their unique role in the smoking cessation process. Providers and nurses must do more than just screen for smoking status. Relevant counseling should be provided to patients to allow them to understand their own

personal risks from smoking and benefits from quitting. It has been found that the development of an action plan is a positive predictor of success in smoking abstinence (de Hoog et al., 2016).

Pharmacotherapy should also be offered to patients who are interested. Medications that have been widely utilized for years include nicotine replacement therapy, bupropion, and varenicline. Providers should discuss with their patients the benefits and possible side effects of these medications to make a joint decision on which medication is best for each individual patient. Combining medications with behavior therapy has been shown to increase success rates in patients attempting to quit smoking (Patel & Steinberg, 2016).

Nurses Delivery of Smoking Cessation Counseling

Nurses represent the largest body of health care professions, with 3.1 million registered nurses across the nation (American College of Nurses, 2017). This profession is in an excellent position to ensure delivery of individualized patient education while a patient is admitted to the hospital. For these reasons, nurses have often been identified as important facilitators for smoking cessation counseling to hospitalized patients. Despite this unique opportunity, it has been found that the execution of smoking counseling or referral is suboptimal (Linda Sarna, Bialous, Ong, Wells, & Kotlerman, 2012; L. Sarna et al., 2009). As high as 81% of nurses reported not providing referral to the free tobacco quitline to their patients (Linda Sarna et al., 2012; L. Sarna et al., 2009). As previously mentioned, failures in the administration of smoking related counseling often is related to lack of training or time (Raupach et al., 2014).

Multiple studies have found that when nurses are provided with additional training or guidelines to follow in the implementation of smoking cessation counseling, they are more likely to follow through with the intervention (Fore, Karvonen-Gutierrez, Talsma, & Duffy, 2014; Katz et al., 2013; L. Sarna et al., 2009; Sheffer, Barone, & Anders, 2011). Some nurse characteristics

have been explored in the role of adequate delivery of smoking counseling. Sarna, et al. (2012) found that newer nurses were more likely to carry out smoking cessation counseling than more experienced ones and that personal smoking status may also influence the extent of counseling. Sheffer, Barone and Anders (2011) identified that a one-hour training intervention was effective at increasing staff nurse motivation, knowledge, confidence, perceived importance, perceived effectiveness and preparedness in relation to delivery of smoking cessation interventions. Similarly, Fore, et al. (2013) found that nurses who participated in a *Tobacco Tactics* standardized intervention improved perceived confidence and importance of delivering cessation interventions.

A systematic review by Kazemzadeh, Manzari and Pouresmail (2016) found that accompanying counseling with booklets, brochures or videos and to provide positive reinforcement works best for hospitalized patients for nurse driven interventions. Katz, et al., (2013) also identified the efficacy of a multimodality approach including education to staff, adaptation of the EMR and implementation of a set guideline in increasing nurses' attitudes on counseling. In a study by Dawood et al. (2008) admission to a hospital with an inpatient smoking cessation program was associated with a higher level of quitting after discharge. This stresses the importance for a standardized inpatient counseling session, accompanied with educational materials, and referral to outside resources upon discharge.

Current guidelines state that all current smokers should receive advice from a clinician while admitted to the hospital and referral to a specialized clinic or telephone quitline (Fiore M.C., 2008; West, McNeill, & Raw, 2000). Current studies demonstrate lack of follow through and need for inpatient smoking cessation interventions. Using front line nursing staff provides an effective facilitator of such intervention once adequate training takes place. Integration of a

program into the already hectic workflow of a staff nurse is essential to aid in adoption of the new program.

Needs Analysis

Robert Wood Johnson University Hospital

Robert Wood Johnson University Hospital (RWJUH) in New Brunswick is part of the larger RWJ Barnabas Health Care System. This healthcare system prides itself on providing convenient, comprehensive across New Jersey. RWJUH is a 965-bed hospital, which includes both the New Brunswick and Somerset campuses. The hospital system is currently promoting the platform of "getting healthy together" by offering preventative health and wellness programs throughout the state. The hospital has been named a Center of Excellence in cardiovascular care, cancer care, stroke care, neuroscience, joint replacement and women's and children's care. It operates a Level 1 Trauma Center and is the principle teaching hospital for Rutgers Robert Wood Johnson Medical School.

Current smoking cessation counseling for hospitalized patients varies depending on institution. RWJUH in New Brunswick screens for smoking use in all patients as part of the admission process. After that, the counseling and interventions offered vary depending on the provider and staff involved in the patient's care. The unit where this project will take place is a 31-bed telemetry unit. The primary population is patients with cardiovascular complications such as arrhythmias, coronary artery disease or heart failure. Although the cardiac population is the focus, patients with other conditions are admitted with diagnoses including COPD exacerbation, pneumonia, renal complications, and other medical surgical diagnosis. All patients who are current smokers when admitted to the hospital can benefit from quitting.

SWOT Analysis

A SWOT analysis was performed to assess for current internal strengths and weaknesses as well as external opportunities and threats. Internal strengths that can help combat weaknesses include support from the nurse manager and director, an existing relationship with the staff nurses, the understanding of current staff work demands, and the availability of skilled nurses and physicians who have experience with their patient population. Another strength for this project is the electronic care plan that is already available to nurses on the unit and lists smoking cessation counseling as an intervention. This provides an easily accessible point for the nurses to document their intervention. Electronic care plans are filled out by every nurse for each shift. The documentation of smoking cessation counseling is being underutilized now. The major internal weaknesses were identified as staff nurse time constrictions, staff buy in for implementing a new program, previous beliefs and experiences with smoking cessation counseling, and patient engagement in a smoking related program while in the hospital.

External forces were also examined for opportunities and threats. The main threat identified is the changing landscape of the RWJ Hospital system after merging with Barnabas Health and the changes that may occur throughout the organization. Opportunities that can aid in supporting this project include the stressed importance to reduce hospital re-admissions and reduce costs, accrediting body support in enhancing patient education and offering smoking cessation counseling while patients are hospitalized, and the need to carry out patient and family centered care which requires the individualization of patient care plans.

There is a demonstrated need for improvement in smoking cessation strategies by the continued high rates of death and disability caused by smoking. While improvements have been made and agencies have set guidelines to stress the importance of this intervention, there is still

room for improvement. Smoking cessation programs within hospitals need to be more standardized and include more comprehensive strategies. This will require additional education to front line staff, such as nurses, and standardization of current practices. Screening must not be the only activity performed within hospitals, this must be followed up with counseling, referral and offering of pharmacotherapy.

Problem Statement

Smoking is still a current problem nationally and any patient who smokes will improve his or her health status by quitting. Hospitals greatly differ in the way smoking cessation education is delivered to patients. Nurses are front line staff who have the most exposure to a patient while admitted to the hospital. Utilizing their presence to the smoking population offers an opportunity to ensure the carry out of smoking cessation counseling. Documentation systems provide a standardized reporting measure of this counseling but are being poorly utilized. Additional training is needed to standardize the delivery of smoking abstinence programs by nurses. This project addressed the absence of counseling provided to hospitalized patients beyond being screening for smoking status.

The questions that were answered through this project were: 1) “Among current smokers hospitalized on 5 Tower nursing unit within Robert Wood Johnson University Hospital (P), what is the effect of a smoking cessation counseling intervention on (I) utilization of nicotine replacement therapy (O)”; and “Among registered nurses working on 5 Tower nursing unit within Robert Wood Johnson University Hospital (P), what is the effect of an educational intervention on their current awareness (O) and implementation of smoking cessation counseling (O) using a short information session (I), and providing a reference badge card (I)?”

Aims and Objectives

The overarching aims of this project were to:

1) Improve smoking cessation among hospitalized patients.
    a. Improve utilization of nicotine replacement therapy while hospitalized.
2) Increase nurse awareness and adherence to carrying out evidence-based cessation counseling for hospitalized patients identified as smokers.
    a. To improve nurse awareness and adherence regarding the delivery and effectiveness of the *5A's* smoking cessation guideline.
    b. To improve nursing documentation of smoking cessation counseling as they provide it to patients.

Review of Literature

The review of literature was performed with the following main considerations: 1) Best practice in delivery of smoking cessation for patients hospitalized; 2) Nurses' role in delivery of smoking cessation while patients are hospitalized (Appendix A). The findings will be presented here.

The databases utilized were CINAHL and PubMed using master headings and mesh headings upon professional recommendation by Sarah Jewell, the Information and Education Librarian at The George F. Smith Library. The following key terms were used in CINAHL: *smoking cessation programs, smoking cessation, registered nurses, inpatients* with a total of 130 potential sources found through different term combinations. Results were narrowed using limits of: peer reviewed, academic journals, and within the last 10 years reducing potential sources to 41 findings. Additional articles were eliminated due to content irrelevance, if smoking was not a

risk factor for the patient, if they were not available in full text or available in English, and interventions occurring outside a hospital setting.

The following Mesh key terms were applied in PubMed: *smoking cessation, hospitalization, nurses,* and *smoking cessation* with a total of 739 hits. Results were narrowed using limits of five years, and adding additional modifiers to the Mesh terms: *smoking cessation/methods, smoking cessation/psychology, smoking cessation/statistics and numerical data* to total 121 hits. The same inclusion and exclusion criteria were applied to these articles. References of the selected papers were also searched and evaluated for application to the study question.

Many of the key findings from the review of literature included findings from surveys, systematic reviews or guideline suggestions. Some of the major key findings that were used to shape the methodology of this project are identified below. The literature review conducted by Kazemzadeh, Manzari and Poursemall (2016) found that smoking cessation counseling offered by nurses during hospitalization plays a key role in patients quitting once discharged. They also found that offering supporting documents such as booklets and brochures aid in smoking cessation interventions (Kazemzadeh et al., 2016).

Katz, et al., (2013), performed a pre-and post-guideline implementation trial. This trial found effectiveness in utilizing a multimodality approach to improve the quality of smoking cessation services. After education and guideline implementation using a *5 A's* strategy nurses reported more positive attitudes towards offering smoking counseling. This also led to a greater likelihood of the nurses providing counseling to all smokers admitted to the hospital (Katz et al., 2013). A pre- and post- training survey was conducted by Sheffer, Barone and Anders (2011) which found the benefit of a 1-hour training intervention in increasing nurse motivation,

knowledge, confidence, perceived importance, effectiveness and preparedness. Similarly, Sarna, et al., (2009) found that nurses who are aware of a specific tobacco program and receive training report an increased frequency in administering interventions to patients.

In relation to patient successfulness in achieving smoking abstinence Dawood, et al., (2008) found that patient admission to a hospital with an inpatient smoking cessation program was associated with higher levels of quitting after discharge. De Hoog, et al., (2016) identified that planning enhances action and coping with difficult situations after discharge. Clinical practice guidelines reveal that even brief tobacco interventions are effective, however there is a positive correlation in effectiveness and treatment intensity (Fiore M.C., 2008). Training has been identified as an important part of the successful implementation of smoking counseling by a multitude of studies (West et al., 2000). Research also supports the referral of smokers to specialists or community services prior to discharge to aid in cessation attempts (West et al., 2000).

Many of the key findings from the literature review support the implementation of a training program for nurses or other front-line staff responsible for offering smoking cessation services to patients. Interventions are found to be more successful after training sessions take place. Smoking cessation services are effective when provided during a hospital stay and have been associated with higher frequencies of successful quit attempt upon discharge. More comprehensive interventions including offering educational materials, medications, referrals and follow up have been found to be more successful than any one intervention alone (Fore et al., 2014). These findings have been reviewed and utilized in the formulation of the methodology of this project.

Theoretical Model

The theory utilized to guide this project is the Ottawa Model of Research Use (OMRU). This theory will help translate research into practice and provide a structure for continuous monitoring during every aspect of the project (National Collaborating Center for Methods and Tools, 2010). While it stresses the importance of individuals, it also considers the change that must occur on organizational levels to see success (National Collaborating Center for Methods and Tools, 2010). The theory accepts that: 1) research is interactive synergistic process; 2) the process is not unidirectional; 3) patients play a key role in all elements of the process; and 4) both societal and health-care environments will affect all aspects of the process (Graham & Logan, 2004).

This smoking cessation project is oriented to bring an evidence based change to a clinical practice setting. Promotion of strengths and adequate preparation for barriers is crucial for the successful uptake of this program. The outcomes used to evaluate the aims and objectives of this project will be discussed in a later section. Ongoing monitoring from inception to and completion of this project can provide data for further implementation of hospital-based smoking programs.

Methodology

This project planned to improve nurse awareness and adherence to carrying out evidence-based cessation counseling for hospitalized patients identified as smokers. To carry out the above aims and objectives the literature has been referenced for best practices and guidelines. The main intervention of this project was to implement and increase utilization of a standardized smoking cessation protocol on the 5 Tower nursing unit. Current smokers admitted to this unit were provided with a semi-structured approach utilizing the *5 A's* strategy (Appendix D).

All patients were asked about their current tobacco use, advised to quit smoking and assessed for readiness in actual cessation. Patients who verbalize interest in quitting were offered additional education materials on smoking, cessation strategies, and offered nicotine replacement therapy while hospitalized, if deemed medically appropriate by the provider. Patients then continued to receive assistance in quitting though brief counseling sessions and by being provided with information on how to follow up after discharge from the hospital.

Setting

The specific floor where this project took place was 5 Tower Nursing unit within the New Brunswick RWJUH campus. This is a cardiac medical surgical unit that has 31 beds, 4 of which are designated for intermediate care patients.

The patients on 5 Tower nursing unit have a variety of medical problems. The average daily census is computed at midnight and has been reported as 27 patients via the unit manager, A. Gervasi (personal communication, February 28, 2017).

Population

The population of interest was staff nurses on the 5 Tower nursing unit. The nurses who worked on day shift and held permanent positions were included in this project. The day shift roster included 19 employees who were either full time, part time or listed as per diem. The PI and head nurse were excluded from this project making the sample size 17 nurses.

Inclusion/Exclusion Criteria for Nurses

Inclusion criteria:

- All day shift registered nurses on 5 Tower nursing unit
- Employment status: full time, part time or per diem

Exclusion criteria:

- Float nurses
- Unit administrators

Recruitment

A flyer was developed and placed in the nurse break room providing information on the educational session that would take place and the dates: September 2 & September 9 (see Appendix E). The two educational sessions occurred on two weekend shifts to ensure coverage of most day shift staff. Light refreshments were provided, educational materials and badge cards were also distributed to all staff who attended.

Consent

Consent was obtained from all study participants prior to project intervention (Appendix F). It was emphasized that this was a student -run project with the sole purpose to standardize the delivery of smoking cessation counseling. The PI running this project had no influence over administrative responsibilities on the 5 Tower nursing unit in relation to scheduling, staffing, evaluations or promotions. It was conveyed to staff nurses that unit and hospital management had no influence or participation in this project. It was underscored that the PI would maintain privacy and confidentially of all identifiable collected data.

Design

This was a quality improvement project which used a convenience sampling of nurses on a hospital inpatient unit. The project began after IRB approval and started with a didactic program provided to all day-shift staff nurses in two separate sessions. These sessions were offered within the 5 Tower break room on the RWJUH during regular working hours. The

sessions were run by the PI who presented information on risks of smoking, significance of the problem and benefits of a brief smoking cessation intervention (Appendix G). Nurses were also educated on the implementation of a *5 A's* based smoking cessation intervention. This intervention was reinforced through posters in breakroom, *5 A's* strategy mini badge cards, and *5 A's* pocket booklets. These materials provided reminders on how to carry out the *5 A's* strategy (Appendix H). Additional materials were provided to the unit for patient use: a referral brochure to the local smoking dependence clinic, educational packets on the risks of smoking, personalized quit strategy worksheets, and other assorted handouts and wallet cards. These materials were stored in a file folder at the nursing station to provide easy access for all nurses. Once the nurses completed the training session, the smoking cessation guideline was implemented on the unit. The protocol implementation took place over a one-month period.

Nurse current practices, and awareness regarding smoking cessation were evaluated using a background survey and a follow up quality improvement evaluation tool. The background survey was offered to all available day shift staff nurses on 5 Tower before they received the educational training and the second survey was administered a month after initiation of the new protocol. The surveys were constructed by the PI after reviewing several surveys used in previous research studies which examined nurse knowledge, awareness and current practices pre- and post-educational intervention. Many the survey questions follow a Likert style with five response options (Appendix I& J). The survey was vetted by members of the project committee.

Chart Review

A pre-intervention chart review took place upon IRB approval and two weeks prior to the education sessions using a random sampling of twenty smoker's charts. Charts were identified for smoking status by review of the Health History document obtained on patient admission. The

charts were reviewed for confirmed current smoking in the health history provided on admission, nicotine replacement therapy orders and nurse documentation of smoking cessation education in the nursing care plan. A post-intervention chart review took place to assess for changes in documentation. This review took place over the month-long implementation period of protocol implementation to review for confirmed smoking status in the health history, nicotine replacement orders and nurse documentation of providing smoking education.

The electronic medical record system utilized at RWJUH is Sunrise Clinical Manager by Allscripts, this was the only system utilized in this process. The post-intervention chart review process started the week after the educational sessions to the staff nurses took place and continued for one month. Medical record numbers were the only identifiable data that were collected from the charts and after the information was retrieved, the data was de-identified. Non-identifiable data was the only data included in the analysis. The PI and committee chair were the only researchers involved in the retrieval of data (see Appendix K).

Risks & Benefits

There was only minimal potential risk for any nurses participating in this project and it was regarding confidentiality. Any risk regarding confidentiality and survey responses was mitigated through security of the survey results by the PI and assurance that participation would not affect their job status. Benefits to staff nurses included improving standards of nursing care and improving patient outcomes.

This project adhered to all ethics that must be observed for the nurses involved. First and foremost, this project observed the principles of non-maleficence and beneficence by acting in the best interest of the participants while minimizing or preventing harm. The principle of autonomy was respected by honoring participant's free choices to participate in the project. The

principle of justice was promoted by treating all participants equitable; regardless of their age, sex, religion, race, medical conditions or insurance status. Overall, the very core of this project was help enhance both nurse and patient knowledge and broaden utilization of resources to aid in combating a deadly addition.

Compensation

All nurses were offered light refreshments, badge cards, and other supporting handouts during their educational sessions.

Timeline

See Appendix L.

Budget & Resources

See Appendix M.

Evaluation Plan

Statistic Considerations

Descriptive statistics (frequencies, %) were used to describe the characteristics of the study population. Descriptive statistics (frequencies, %) were chosen to assess nursing documentation rate, Fisher's exact test was used to compare frequencies of completed charts before and after the intervention. Analytical statistics were used to determine the efficacy of the project interventions. Wilcoxon signed rank test was utilized to compare ordinal data obtained using Likert scale type pre-and post- survey results of the same sample of participants. The statistical software package SPSS was used to complete data analysis. Any open-ended response

questions found on both the background survey and quality improvement evaluation were coded for themes via the PI and committee chair.

Data Maintenance and Security

Nurses were provided with a randomized ID number by the PI which was used on both the background survey and quality improvement evaluation. These IDs were randomized using a random number function through Excel. This allowed the PI to compare pre-and post-survey results. These surveys were administered by the PI and the master list of ID codes and nurse names was kept separately from the actual surveys. Surveys were stored within the RWJUH campus, in a locked cabinet. Data from the chart audit was logged using the patient medical record number and has stayed within the RWJUH campus in a locked cabinet (see Appendix L). Data was de-identified upon completion of data collection and only de-identified data will be used for analysis.

After the project was completed, the IRB was closed and the final manuscript was completed all data was destroyed in accordance with Rutgers University guidelines. Hard copies of data including patient medical record numbers and nurse employee numbers did not leave the RWJUH campus and be destroyed via hospital policy.

Results

This section will review the results of the data analysis, including quantitative results from the nurse surveys and chart review, in addition to qualitative results from the open-ended questions. Demographics are examined and key findings are highlighted.

Results of Chart Review

Out of the 20 charts reviewed pre-intervention zero had care plan education documented by nurses on 5 Tower nursing unit, and two had nicotine replacement orders (11%). Post-intervention chart review examined a total of 258 charts over the one-month period: 31 were identified as positive smokers (12%), 146 reported as non-smokers (56%), 69 reported as former smokers (27%), and 12 had an unknown smoking status (5%).

Out of the 31 identified smokers: five (16%) smokers had documented care plan education by nurses on 5 Tower and five charts (16%) had nicotine replacement therapy orders. As shown in Table 2. To compare frequencies of completed charts pre- and post- intervention, Fisher's exact test was performed to correct for the violation of the chi-square test assumption that no expected value should be less than five. For the care plan documentation, there was a numerical increase in frequencies of completed charts: from zero pre-intervention to five post-intervention. However, this increase was not statistically significant, with a *p*-value of 0.072 which is greater than the significance level of 0.05. For nicotine replacement orders, there was also a numerical increase in the number of charts completed from pre- to post-intervention. However, this change was not statistically significant, due to the *p*-value being 0.429, which is higher than the significance level of 0.05.

Results of Survey Responses

A convenience sample of 14 nurses was obtained out of 17 (82%) with a 100 percent follow up response rate with both pre-and post-surveys. Years of experience varied from less than one year (14%), two to five years (22%) and five or more years (63%). There were no nurses with one to two years of experience. Of the surveyed nurses only one (7%) identified as using tobacco products themselves. Two out of 14 (14%) had heard of the *5 A's* protocol prior to implementation of the study. Refer to Table 1 for additional demographic data.

Questions four, five, six, and seven of the pre-and-post surveys provided Likert style questions assessing nurse utilization of the *5 A's* protocol, as shown in Table 3. The scores ranged from one (always) to five (never), meaning that the low score corresponded to the highest level of frequency. The pre- and post-intervention test scores were compared using a Wilcoxon Signed-Rank test.

Question four assessed frequency of asking patients about smoking status. The scores ranged from one (always) to five (never), meaning that the low score corresponded to the highest level of frequency of asking about smoking. A Wilcoxon Signed-Rank test indicated that post surveys were statistically different from pre-surveys ($Z = -2.203$, $p = 0.028$), due to the p-value being less than the accepted rate for statistical significance. The negative sum rank (33.50) was higher than the positive sum rank (2.50), suggesting that the scores were generally lower post-intervention. Therefore, it can be concluded that there was a statistically significant increase in the frequency of asking patients about their smoking status post intervention.

Question five assessed nurse frequency of advising patients to quit smoking. The scores ranged from one (always) to five (never), meaning that the low score corresponded to the highest level of frequency. Post test scores were found to be statistically different from pre-test scores using the Wilcoxon Signed-Rank test ($Z = -2.414$, $p = 0.016$). The negative sum rank (28) was higher than the positive sum rank (0), suggesting that scores were generally lower post intervention. Therefore, it can be concluded that there was a statistically significant increase in the frequency of advising patients to quit smoking post-intervention.

Question six assessed frequency of assessing patients level of readiness to quit smoking. The scores ranged from one (always) to five (never), meaning that the low score corresponded to the highest level of frequency of assessing readiness to quit. The Wilcoxon Signed-Rank test

found the difference in results to be statistically significant (Z = -2.810, p = 0.005). The negative sum rank (73.50) was higher than the positive sum rank (4.5), suggesting that scores were generally lower post intervention. It can be concluded that there was a statistically significant increase in the frequency of assessing patients level of readiness to quit smoking post-intervention.

Question seven assessed nurse frequency in assisting patients in their quit attempt. The scores ranged from one (always) to five (never), meaning that the low score corresponded to the highest level of frequency. The Wilcoxon Signed-Rank test found this difference to be statistically significant (Z = -2.987, p = 0.003). The negative sum rank (87.5) was higher than the positive sum rank (3.5), suggesting that scores were generally lower post intervention. Consequently, it can be concluded that there was a statistically significant increase in the frequency of assessing patients level of readiness to quit smoking post-intervention.

Question eight in the pre-survey assessed for how often nurses were arranging follow up for patients. The scores ranged from one (always) to five (never), meaning that the low score corresponded to the highest level of frequency. The sum of the pre-survey responses was 57 with a mean of 4.07, demonstrating a fairly low frequency of nurses arranging for follow up for their patients. The follow up question in the post survey was in an open-ended format, which is discussed below.

Question nine of the pre-survey and eight of post-survey assessed a nurses' perceived ability to impact a patient's quit attempt (yes=1, no = 0). The McNemar statistic was not statistically significant (p=1.00), see Table 4. Therefore, there is no certainty that the difference in frequencies is related to the intervention or due to chance.

Question 10 of the pre-survey and nine of the post survey assessed nurse level of preparedness in offering cessation interventions. The scores ranged from one (always) to five (never), meaning that the low score corresponded to the highest level of frequency in preparedness level. The pre-and post-intervention test scores were compared using a Wilcoxon Signed- Rank test, see Table 3. The negative sum rank was 55.00 the positive sum rank was 0.00. Since the negative sum rank was higher than the positive sum rank, it suggests that the difference between pre-and post-test was negative or, in other words, the scores were generally higher in the pre-test than in the post test. It can be concluded that there was an increase in frequency in nurse preparedness level after the intervention. The *p*-value for the statistics was 0.004 which is less than the significance level. Thus, there was a statistically significant increase in the level of preparedness of nurses in providing smoking cessation interventions post intervention.

The post survey found that 11 out of 13 (85%) were able to correctly organize the *5 A's* protocol, two were incorrect (15%) and one question was unanswered. Eleven out of 13 responses (85%) found the *5 A's* framework to be helpful in their delivery of smoking cessation counseling, two (15%) found it somewhat helpful and one did not answer. Fourteen out of 14 (100%) reported the training to be helpful, as shown in Table 5.

Pre-and post-intervention surveys contained three open ended responses which were analyzed by coding for themes. The first open ended question in both surveys asked why or why not nurses felt they had, or did not have, an impact on a patient's ability to quit smoking. Common themes included: patient willingness to quit and awareness, nurse's ability to empower, influence, and educate, and building trusting relationships.

The next two open ended questions in the pre-survey asked about barriers and needed resources for the unit to provide smoking cessation counseling. Common themes for these two

questions included: a lack of time, focus, and resources (pamphlets, educational tools), a lack of accessibility to resources, non-compliance or unwillingness from patients, and lack of support and financial resources for patients such as a counselor.

The last two open-ended post survey questions asked about changes to practice after the intervention and any further suggestions for a smoking cessation program on this unit. Themes identified in change of practice included: increased effectiveness, ease, organization, and thoroughness of counseling, increased accessibility to resources (pamphlets, follow up, information), and an increase in assessment by nurses and offering of information to patients. Additional suggestions included: increased ease of obtaining nicotine replacement orders, continued supply of educational resources and continued educational offerings about smoking counseling and changes to the documentation system.

Discussion

This project sought to address the lack of consistency in smoking cessation counseling offered to patients in a hospital setting. The main aims were to improve smoking cessation counseling and increase nurse awareness and adherence in carrying out an evidence based cessation counseling protocol for patients. Both qualitative and quantitative data was used to measure the ability for this project to meet those aims.

Major findings of this project include the statistically significant increase in frequency of nurses carrying out four out of the *5 A's* (ask, advise, assess, assist) and preparedness in offering smoking counseling post intervention. These findings are consistent with the existing data that also demonstrated an increase in nurse delivery of smoking cessation counseling after education and training on how to carry out such services (Katz et al., 2013; L. Sarna et al., 2009; Sheffer et al., 2011). Further stressing the importance on introducing an educational program to nurses on

smoking cessation is self-reported increase in arranging for follow up. In the post-survey, none of the nurses marked seldom or never when asked about carrying out the ask, advise, assess, assist or preparedness level, demonstrating a marked improvement in all areas intended to be influenced through this protocol implementation.

The chart review also demonstrated a numerical although not statistically significant increase in nurse documentation rates of providing smoking counseling. Nicotine replacement therapy orders also numerically increased after intervention, however, this change was not statistically significant. Many nurses did not ask for orders and did not document the action, decreasing the number of completed charts and reducing the statistical power to detect differences.

Other major findings include common themes found in the open-ended questions. Many of the barriers identified by the nurses were overcome by the support resources provided to the unit through the protocol implementation. Overall, awareness improved due to the small number of nurses being aware of the *5 A's* protocol prior to implementation and majority correctly placing the protocol in order afterwards.

Nurses overall reported an improvement in their practice due to the ease, support and resources given through this protocol. Other suggestions such as modifying the documentation system to combat difficulty getting nicotine replacement orders and continued education offerings should be considered when implementing a smoking cessation program on a unit for sustained adherence.

Both pre- and post-survey results found that the majority of nurses believed they could impact a patient's ability to quit smoking, which was not consistent with some other studies. Katz, et al., (2013) reported that "several nurses expressed doubts about whether they could

overcome patients' resistance to quitting". Another study by Sheffer et al., (2011) found that "nurses felt minimally successful in helping patients quit". Making the results from this project different in that nurses felt they could impact a patient's ability to quit both pre- and post-intervention. However, when asked about carrying out the steps in the *5 A's* guideline, there was an increase in reported frequency post intervention. This finding may demonstrate that while nurses have the belief that they can impact a patient's ability to quit smoking, barriers in place are too great to actually carry out counseling services. This finding suggests that by overcoming common barriers, a hospital may be able to increase adherence to a smoking cessation protocol. It also stresses the importance in identifying the existing barriers when designing a protocol for a unit.

Implications for Clinical Practice

The aims of the project were met by demonstrating an increase in delivery of smoking cessation counseling, and improving nurse awareness and adherence to a protocol. This study can contribute to already existing evidence that show the importance of standardizing smoking cessation counseling on hospital in patient units and providing additional training to the staff nurses asked to carry out these services.

Standardization allows for ease and thoroughness in implementation and training provided additional support and resources for nurses to use. More extensive studies have linked hospital inpatient units with comprehensive smoking cessation programs with greater success in quitting post discharge. This allows us to believe that by equipping nurses to provide a comprehensive smoking cessation program may positively influence the patient's success in quitting.

Implications for Healthcare Policy

While there are already policies in place through insurance companies, such as CMS, in regards to smoking and quality measures that hospitals must meet there is still room for improvement in this area. By showcasing positive outcomes of smoking cessation programs offered within hospital units, government and private sector insurance companies may begin to increase requirements offered by hospital chains. By requiring more from hospitals through core measures which determine reimbursement, a greater push may be placed on hospitals to put time and resources towards the development of a comprehensive smoking cessation program.

Implications for Quality/Safety

This quality improvement study demonstrated an overall improvement of quality and consistency of delivery of smoking cessation counseling on a hospital inpatient unit which may increase uptake of similar programs on other units. Quality and patient safety are always at the forefront of healthcare and by implementing a similar protocol hospital wide may allow the hospital system to have a greater influence on smoker's ability to successfully quit. The cessation of smoking is beneficial to the overall health of the patient, as well as, the financial burden of smoking related diseases on healthcare costs.

Implementation of a comprehensive smoking program, as demonstrated by this study and others, can simply utilize staff that are already in the position to develop trusting relationships with patients. Nurses have been identified as successful counselors for smoking cessation due to their increased access to their patients.

Implications for Education

Multiple studies demonstrate the importance of education when attempting to increase adherence in delivery of smoking cessation counseling. This study further supports this, and through open ended responses nurses identified a need for further education beyond one simple session. Increased education can further increase uptake and follow through of these counseling services. Hospitals that have education programs, nurse educators and program offerings in place should consider adding smoking cessation as a topic. This can be offered during orientation or as unit based education sessions. The many studies vary in style and duration of education session offered, but the majority still found improvement in counseling services after attending educational offerings.

Limitations

The main limitations of this study are based on the small scale of this project. Due to the small sample size of nurses, only utilizing one hospital unit and short duration of follow up it is hard to note if the changes made will be sustained over time or effected in a different hospital setting. However, the results mirror larger scale studies which does demonstrate promise in its implication on a larger scale. While the sample size was smaller, it was almost inclusive of an entire unit which is very varied in its patient population. Telemetry, medical surgical units are exposed to a wide variety of patient diagnosis and demographics which can aid in making the results more generalizable.

The self-reported measures from the nurses can also be identified as a limitation, although other similar studies used similar means for evaluated effectiveness of protocol implementation. Additionally, chart review numbers did mirror increase in smoking counseling. One final limitation to this study is the PI's relationship with the nurses asked to carry out this protocol. Due to the PI working on the hospital unit where implementation took place, nurses

may have had a bias in either choosing to follow the protocol or not. This may be a barrier to the generalizability of this findings. This can also be viewed as a strength that should be considered with further implementation of this protocol. Staff nurses should be inspired to implement the change on their unit, which may make the staff more receptive to change versus the protocol coming from an outside source.

Dissemination

The findings for this research study have been disseminated through the three P's: poster, presentation and paper. The entire study was presented via poster and short presentation at RWJ Barnabas research day as a poster contest winner. The study has also been accepted to the Eastern Nursing Research Society 30th Annual Scientific Sessions conference for poster presentation. A final presentation will take place at the Rutgers School of Nursing to further disseminate findings. The final manuscript will be provided to the Rutgers School of Nursing, and committee members. Plans are also being made to submit the final paper for publication in a nursing journal.

Sustainability

This protocol implementation did not end with the administration of the post-intervention surveys. The protocol is still in place on the hospital inpatient unit and resources are available for nurses. Through dissemination, it is hoped that other hospital inpatient units will adopt similar programs on their units. Through the RWJ Barnabas research day, members from RWJ Somerset expressed interest in implementing a similar program within their hospital units. It is the hope that furthered interest in this protocol will be found through continued dissemination.

This project can be furthered by future students by implementing this protocol in other hospital chains, on multiple hospital units or measuring outcomes from this protocol over an increased period of time. Other barriers found in this study can be addressed such as modifying the documentation system. Further work can be done by getting the patient perspective on a protocol such as this, rather than the nurses, to see if modifications need to be made to aid in the success of patients quitting post discharge.

Plans for Future Scholarship

While this study adds to the existing data supporting education and protocol implementation of a hospital inpatient smoking counseling program, further research is needed to continue to stress the importance of these findings. Further studies can examine overcoming other barriers such as documentation systems and a more interdisciplinary approach to counseling. Research can examine how to further increase documentation of nurses, which may be found in documentation modification. Hospitals should look across chains to examine differences offered in the variety of documentation systems to find which work best for staff. This study did provide the nurses with contact information for a tobacco counselor affiliated with the hospital but her services are limited due to her working alone. Other studies have found success with increased access to a counselor and physician support in protocol implementation. This study was solely focuses on nurse uptake of a smoking protocol but the addition of physician support may increase access to nicotine replacement therapy and further reinforce the education provided by the nurses.

Future research can also be done to examine the longevity of implementing a protocol, since this study only examined a one-month period. Increased length of studies may help identify barriers that come about in carrying out a program for a longer period of time and keeping

compliance of staff high. Additionally, studies can attempt protocol implementation on more than one unit, which may help to identify barriers from different work environments and different staff demographics.

DNP Experience

The DNP project experience is one unique to anything else. Implementation of this DNP project brought about many different challenges and allowed for personal growth in the adaptation to any obstacle. The main challenge discovered was the PI's ability to gather all unit nurses for the education session during a work day. The majority of the unit staff were very receptive to the training, asked many questions and seemed excited to finally have materials to aid in providing smoking cessation counseling to patients. Discussion between the PI and unit staff lead to productive conversations regarding perceived barriers and ways the new protocol could help alleviate these identified problems.

The second main barrier came in the follow through of the actual protocol. Many nurses reported back that they were asking more patients about their smoking status, and had given out handouts but documentation did not entirely support this. Once again faced with a busy work day, asking nurses to actually document the education they were providing was something that many openly admitted forgetting to do. The implementation of this project brought about both rewarding and challenging experiences all of which lead to a great deal of personal and professional growth.

Conclusion

Smoking is still the leading cause of preventative death in the United States and smoking cessation counseling has been identified as the most effective preventative care service offered

(Lemaire et al., 2015; Patel & Steinberg, 2016). Yet, there is still an identified need for standardization of more effective hospital-based smoking cessation programs. This study sought to increase the carry out of these counseling services to hospitalized inpatients, and increase nurse adherence and awareness of smoking cessation counseling. While there are identified limitations such as small sample size and utilization of self-reported measures, these study findings support similar studies. The importance of standardization of smoking cessation counseling through protocol implementation and education is further demonstrated.

Increasing patients access to these standardized protocols may aid in overall quit rates and help in improving population health and reducing healthcare costs of smoking related diseases. Further research should be performed to examine barriers that may exist on different hospital units and when carrying out a protocol over an extended period of time. Identification of all barriers to a nurse's ability to carry out smoking cessation counseling and elimination of these barriers can further aid in increased compliance. Education sessions coupled with standardization using an evidence based practice such as the *5 A's* guideline have found success in increasing the adherence and offering of smoking counseling. Studies such as this continue to stress the benefits of adding a comprehensive smoking cessation protocol to more hospital units so more patients may be provided with the tools to quit smoking.

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Table 1

Demographics

Characteristics	Frequency	%
Experience		
<1 year	2/14	14.29%
1-2 years	0/14	0.00%
2-5 years	3/14	21.43%
5+ years	9/14	64.29%
Use of Tobacco Products		
Yes	1/14	7.14%
No	13/14	92.86%
Previously heard of 5A protocol		
Yes	2/14	14.29%
No	12/14	85.71%

Table 2

Chart review pre-and post-intervention (Fischer's exact test)

Type of documentation	Pre-intervention frequency	Post-intervention frequency	*p*-value
Care Plan	0 (0 %)	5(16%)	0.072
Nicotine Replacement Order	2 (11%)	5(16%)	0.429

Table 3

Pre- and post-nursing survey using the Likert scale (Wilcoxon Signed Rank test)

Question	Scale	Negative sum rank	*Positive sum rank*	*p*-value
Asking about smoking status	From 1 (always) to 5 (never)	33.50	2.50	**0.028**
Advising to quit smoking	From 1 (always) to 5 (never)	28.0	0.00	**0.016**
Assessing level of readiness to quit	From 1 (always) to 5 (never)	73.50	4.50	**0.005**
Assisting in attempt to quit	From 1 (always) to 5 (never)	87.50	3.50	**0.003**
Perceived preparedness in offering interventions	From 1 (always) to 5 (never)	55.00	0.00	**0.04**

Table 4

Pre- and post-nursing survey using yes/no question (McNemar test)

Question	Scale	*p*-value
Perceived ability to impact a smoker's quit attempt	Yes/No	1.00

Table 5

Post Implementation Nurse Survey

	Yes Frequency (%)	No Frequency (%)	Somewhat Frequency (%)	Unsure Frequency (%)	No answer Frequency (%)
Do you feel utilizing the 5A framework helps you deliver smoking cessation education more effectively?	11/14 (78.57 %)	0/14 (0.00 %)	2/14 (14.29 %)	0/14 (0.00 %)	1/14 (7.14 %)
Did you find this training to be helpful?	14/14 (100.00 %)	0/14 (0.00 %)	0/14 (0.00%)	0/14 (0.00 %)	0/14 (0.00 %)

Appendix A

SWOT Analysis: 5Tower Nursing Unit at RWJ University Hospital in New Brunswick.

Internal		External	
Strengths	Weaknesses	Opportunities	Threats
-Support from manager and director in implementation of new project. -Relationships with unit nurses can endorse support of head researcher. -Understanding of staff nurse work demands through head researcher background. -Trained nurses and doctors who have a good understanding of their patient population.	-Staff nurse time constraints. -Nurse perceptions or established beliefs in how smoking cessation counseling should be carried out. -Patient engagement in a smoking cessation program. -Potential staff resistance to change.	-Growing need to focus on reducing re-admissions. -Accreditation body stressing importance of patient education and need for smoking cessation counseling provided inpatient. -Stressed importance of increasing patient centered and family centered care through individualizing patient care plans.	-Changing landscape within newly merged hospital system. -Lack of commitment to smoking cessation programs on an organization level. -Loss of funding to smoking cessation programs.

Appendix B

Table of Evidence: Smoking Cessation within Hospitalized Patients

Clinical Questions:

1) Among hospitalized smokers (P) what is the effect of smoking cessation interventions (I) on intention to quit (I) or actual cessation after discharge (O)?
2) Among registered nurses working in the hospital (P), what is the effect of an educational or training intervention (I) on their current beliefs (O) and implementation of a smoking cessation program (O)?

Article #	Author & Date	Evidence Type	Sample, Sample Size, Setting	Study findings that help answer the EBP Question	Limitations	Evidence Level & Quality
1	Kazemzadeh, Manzari, Pouresmail	Systematic Review	**Databases accessed**: Web of Knowledge, ProQuest, Medscape, MedlinePlus, Ovid SID, Magiran, PubMed, and Science Direct. **Timeframe:** 1990–2015 **Keywords:** role of nursing in smoking cessation, nursing intervention in smoking cessation, smoking cessation, smoking quitting and interventions planned by nurse.	1) Smoking cessation counseling by nurses during hospitalization plays a key role in quitting. 2) Better for the nurse to accompany other interventions (booklets, brochures, educational videos) and provide positive reinforcement 3) Smoking cessation program per patient individual differences, duration of smoking education level, pack per year status and individual family circumstances.	1) Scope and access to electronic databases of the university. 2) Inclusion of studies written in English. 3) Studies performed using analytic review were not included.	Level II Quality: B

2	Katz, Holman, Johnson, Hillis, Ono, Stewart, Paez, Fu, Grant, Buchanan, Prochazka, Battaglia, Titler, Vander Weg.	Pre-post guideline implementation trial	205 hospitalized smokers on inpatient medicine units at Iowa City Veterans Affairs Heath Care Hospital.	1) Effectiveness of multimodality approach with academic detailing, adaptation of the EMR, peer leadership in improving quality of smoking cessation services (above ask & advise). 2) Nurses showed more positive attitudes toward 5A counseling following guideline implementations and a greater likelihood of providing cessation counseling to all smokers-regardless of motivation to quit.	1) Pre-posttest changes in outcomes may be due to Hawthorne effects, history, or maturation of staff performance during the study. 2) Data on delivery of the 5A's were based on patient self-report. 3) Nursing staff were not required to demonstrate their knowledge of or skill in cessation counseling. 4) It is not clear if intervention would be as effective in	Level II Quality: B

					non-teaching hospital.	
3	Fore, Karvonen-Gutierrez, Talsma, Duffy	Two cross sectional surveys	Offered to all nursing staff at Midwestern VA Medical Center	1) Nurses who participated in Tobacco Tactics intervention reported high perceived confidence in and perceived importance of delivery of cessation interventions. 2) No significant changes in perceived confidence and importance of delivering intervention between 2 and 15 months, showing sustainability of overtime.	1) Only generalizable to staff in this facility. 2) Low response rate (45%).	Level III Quality: B
4	Sheffer, Barone, Anders	Pre-and Post-training tests after 1-hour didactic training.	359 nurses in Arkansas	1) Benefit of 1-hour training intervention is effective at: increasing motivation, knowledge, confidence, perceived importance, perceived effectiveness, perceived importance or barriers, preparedness. 2) Training can increase frequency with which nurses perform interventions to patients.	1) Findings based on self-report. 2) Lack of evidence to demonstrate that the reported increases resulted in an increase in the frequency of the actual intervention behaviors.	Level III Quality: B
5	Sarna, Bialous, Wells,	Cross-Sectional survey	3482 nurses working in 35 Magnet	1) Nurses aware of Tobacco Free Nurses program are more likely to deliver EBP smoking	1) Low response rate (21%).	Level: III Quality: B

	Kotlerman, Wewers, Froelicher		designated hospitals in USA.	cessation interventions and more frequently. 2) Majority of nurses consistently asked & advised patients to quit but fewer provided support to actively assist in quitting. 3) When nurses receive training, they tend to increase frequency in providing cessation interventions. 4) 81% nurses did not provide referral to free tobacco quitline.	2) Data not representative of all nurses working in Magnet facilities, nor an evaluation of smoking cessation efforts in Magnet organizations 3) Data is based off self-reports from web-based survey.	
6	Sarna, Bialous, Ong, Wells, Kotlerman	Cross sectional survey used to describe nursing performance in tobacco use cessation interventions	1790 hospital nurses from three states: California, Indiana, and West Virginia. 10 hospitals from each state were randomly chosen.	1) Nurses delivery of smoking cessation interventions are suboptimal. 2) 70% of nurses in this study rarely/never referred smokers to quit line. 3) Tobacco cessation counseling interventions may depend on characteristics of the nurse: smoker versus non-smoker and experience level.	4) Self-report survey. 5) Self-selection sample bias.	Level: III Quality: B
7	Dawood, Vaccarino, Reid, Spertus,	Prospective Registry Evaluating Outcomes After	2498 patients were enrolled from 19 US centers between January 2003 to June 2004.	1) Admission to a hospital with an inpatient smoking cessation program was associated with quitting after discharge.	1) Limited insights to type of inpatient smoking	Level: III Quality: A

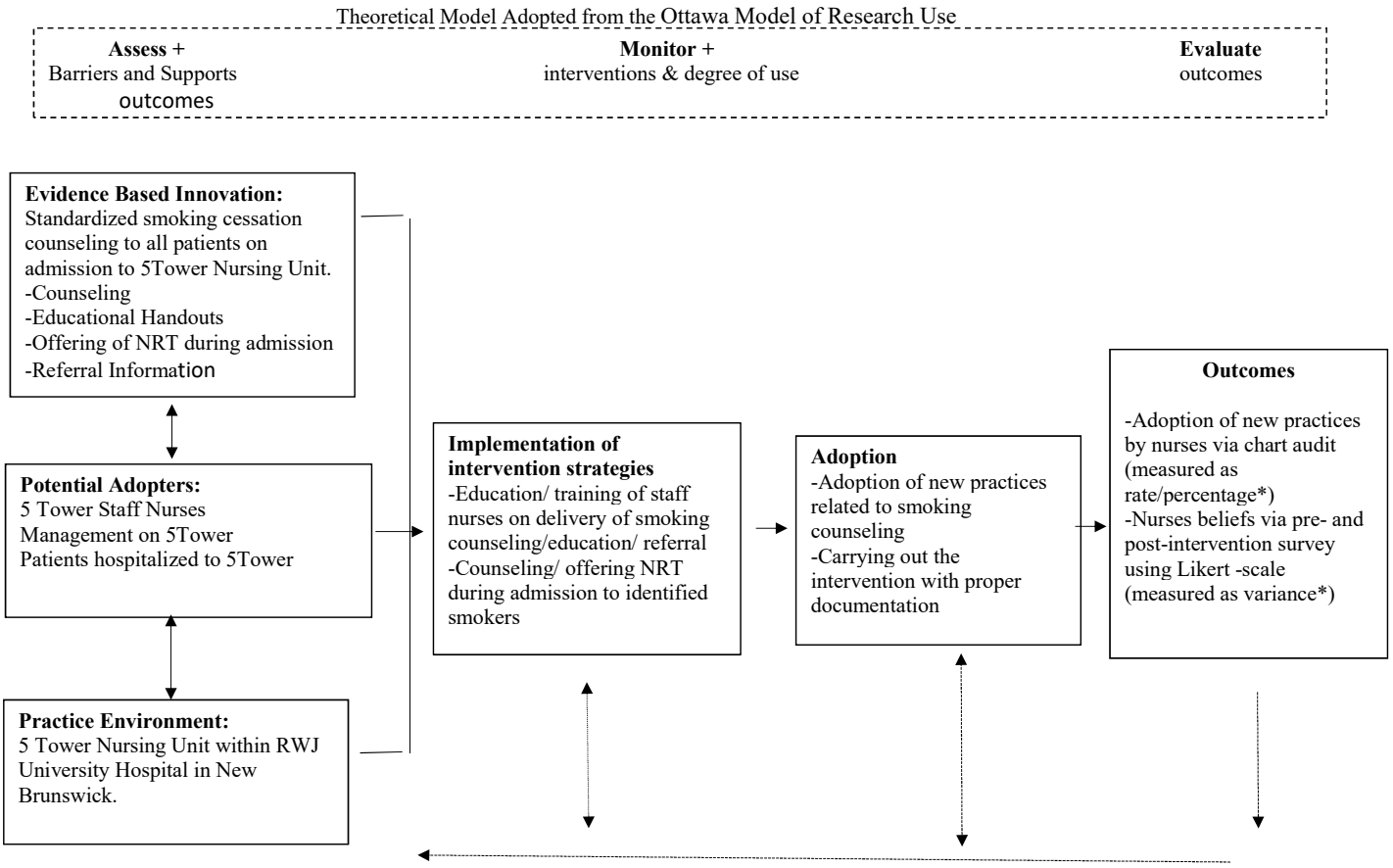
	Hamid, Parashar	Myocardial Infarction Events and Recovery. Data collection through interview and medical record abstraction.		2) 1 in 3 patients were self-reported smokers at the time of admission and more than half continued to smoke 6 months later. 3) Patient referral to cardiac rehab was also associated with successful quitting. 4) Self- reported smoking cessation at post 6 months after MI remains low- leaving room for quality improvement. 5) Performance measure of documentation of smoking cessation counseling to quit is not a good surrogate for actual quitting: question of efficacy of individual provider advice versus a formal program.	cessation programs available. 2) Loss of follow up. 3) Smoking status was self-reported.	
8	De Hoog, Bolman, Berndt, Kers, Mudde, Vries, Lechner	Longitudinal Study	8 Cardiac nursing units in hospitals in the Netherlands: 245 patients were enrolled, only 184 took part in follow up.	1) Self-efficacy predicted intention to quit smoking and revealed to be an indirect predictor of cessation attempts. 2) Intention to quit and making action plans both independently influenced cessation attempt. 3) Planning enhances action and coping with difficult situations.	1) Participants may have been highly stressed while in hospital resulting in high intentions to quit. 2) Self-reported measures.	Level: III Quality: A

					3) Patients were only asked about prescribed action plans and intended coping plans but unable to formulate their own specific plans. 4) Sample only consisted of control group, and a larger sample would have more power.	
9	Fiore, M., Jaen, C., Baker, T., Bailey, W., Bennett, G., Benowitz, N., & ... Williams, C.	Clinical Practice Guideline	Recommendations on the treatment of tobacco use and dependence. The Panel's recommendations primarily are based on published, evidence-based research.	1) Tobacco dependence is a chronic disease that often requires repeated intervention and multiple attempts to quit. 2) It is essential that clinicians and health care delivery systems consistently identify and document tobacco use status and treat every tobacco user seen in a health care setting. 3) Clinicians should encourage every patient willing to make a quit attempt.	1) Not updated within 5 years.	Level: IV Quality: A

				4) Brief tobacco dependence treatment is effective. 5) Individual, group, and telephone counseling are effective, and their effectiveness increases with treatment intensity. 6) Numerous effective medications are available for tobacco dependence, and clinicians should encourage their use by all patients attempting to quit smoking. 7) The combination of counseling and medication, however, is more effective than either alone. 8) Telephone quitline counseling is effective with diverse populations and has broad reach. 9) Tobacco dependence treatments are both clinically effective and highly cost-effective relative to interventions for other clinical disorders		
10	West, McNeil, Raw	Clinical Practice Guideline	Focus was on systematic reviews, but to supplement these by additional findings where relevant. The	1) GPs and practice nurses should receive sufficient practical and theoretical training to enable them to deliver opportunistic advice to	1) Not updated in last 17 years.	Level: IV Quality: A

			additional findings were sought by monitoring of online research databases involving all research that mentioned "smoking", "nicotine", or "tobacco" in the abstract or title.	encourage and support a cessation attempt. 2) Where practicable, current smokers attending hospital should receive opportunistic advice from a clinician like that described above for GPs and the advice should be recorded in the notes. 3) Hospital inpatient and outpatient smokers should be offered specialist support. 4) Smokers should be referred to specialist smokers' clinics as the first line of referral for smokers wanting help beyond what can be provided through brief advice from the GP.		

Appendix C


Theoretical Model Adopted from the Ottawa Model of Research Use
Assess +
Barriers and Supports
outcomes
Monitor +
interventions & degree of use
Evaluate
outcomes
Evidence Based Innovation:
Standardized smoking cessation counseling to all patients on admission to 5Tower Nursing Unit.
-Counseling
-Educational Handouts
-Offering of NRT during admission
-Referral Information
Potential Adopters:
5 Tower Staff Nurses
Management on 5Tower
Patients hospitalized to 5Tower
Practice Environment:
5 Tower Nursing Unit within RWJ University Hospital in New Brunswick.
Implementation of intervention strategies
-Education/ training of staff nurses on delivery of smoking counseling/education/ referral
-Counseling/ offering NRT during admission to identified smokers
Adoption
-Adoption of new practices related to smoking counseling
-Carrying out the intervention with proper documentation
Outcomes
-Adoption of new practices by nurses via chart audit (measured as rate/percentage*)
-Nurses beliefs via pre- and post-intervention survey using Likert -scale (measured as variance*)

Appendix D

5 Tower Nursing Unit Smoking Cessation Protocol

5 Tower Smoking Cessation Protocol

ASK: Every patient on admission to unit.
Did the patient smoke 1 month prior to admission?
Ex: cigarettes, cigars.

↓

ADVISE: Provide brief, clear message about quitting smoking.

↓

ASSESS: Ask patient about their readiness to quit smoking.

↓

ASSIST:
-Offer educational handouts on smoking cessation → TO ALL PATIENTS
-Offer counseling regarding benefits from quitting in relation to their past medical history (Ex: asthma, HTN, DM, MI, Stroke) & ask about withdrawal symptoms (Ex. Cravings, headaches, difficulty concentrating) → EVERY SHIFT
-Ask if patient would like nicotine replacement therapy while in hospital (patch, gum) → call their attending for order.

↓

ARRANGE for follow up:
Provide NJ quitline (1-866-657-8677) information & information about Rutgers Tobacco Dependence program (732-235-8222) prior to discharge.

Appendix E

Recruitment Flyer

Participants Needed

DOCTOR OF NURSING PROJECT

Standardizing Smoking Cessation Intervention
for Patients in an Acute Care Setting

Purpose: To standardize smoking cessation interventions provided to hospitalized patients and to increase nurse preparedness and awareness in offering these interventions.

Who: All 5 tower day shift staff nurses are invited to attend, participation is voluntary.

What: Attend a 30-minute lunch lecture to learn about how to improve smoking cessation interventions to patients who identify as smokers.

Where: 5 Tower nursing lounge.

When: Two sessions will take place to accommodate opposite weekend shifts.
Exact date TBA.

If interested please contact:
Michelle Bentsen, BSN, RN, PCCN
MAB673@sn.rutgers.edu

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School of Nursing

Version 2

Appendix F

Nurse Consent Form

TITLE OF STUDY: Standardizing Smoking Cessation Intervention for Patients in an Acute Care Setting

Principal Investigator: Michelle Bentsen BSN, RN, PCCN

This consent form is part of an informed consent process for a DNP student project and it will provide information that will help you to decide whether you wish to volunteer for this project. It will help you to understand what the study is about and what will happen during the project.

If you have questions at any time during the project, you should feel free to ask them and should expect to be given answers that you completely understand.

After all your questions have been answered, if you still wish to take part in the project, you may complete the survey attached and participate in the educational session.
You are not giving up any of your legal rights by volunteering for this research project.

Why is this project being done?
The purpose of this project is to address the lack of consistency in smoking cessation education within a hospital setting. A lack of structure and guidelines within a hospital setting leaves room for the omission of or varying approaches to tobacco cessation interventions. This project plans to improve hospitalized smoker's exposure to smoking cessation resources in a standardized way while in the hospital. This study also plans to improve hospitalized patient's intention to quit smoking once they are discharged. The study will be run over the course of one-month with an estimate of fourteen nurse participants involved.

What will you be asked to do if you take part in this research project?
A survey will be provided by the PI prior to attending an education session on a new smoking cessation protocol to be trialed on the 5 Tower nursing unit. The educational session will be provided in the nurse break room during your lunch break and last approximately 30 minutes. A second survey will be administered one month after the protocol has been implemented.

What are the risks and/or discomforts you might experience if you take part in this project?
There is no expected harm that can occur from participating in this study. This project has no influence or involvement from upper management and participation is voluntary. Upper management will be excused from participation and not provided any information regarding survey results or nurse participation in this project.

Participation in this project is of no cost to you.

How will information about you be kept private or confidential?
All efforts will be made to keep your personal information in your research record confidential, but total confidentiality cannot be guaranteed. Only a randomized ID code will be placed on your survey, without addition of any other personal identifiers. Surveys will remain within the 5 Tower nursing unit and information will not be removed from premises until all identifiable information is removed.

What will happen if you do not wish to take part in the project or if you later decide not to stay in the project?
Participation in this project is voluntary. You may choose not to participate or you may change your mind at any time. If you do not want to enter the project or decide to stop participating, your relationship with the study staff will not change, and you may do so without penalty and without loss of benefits to which you are otherwise entitled.

You may also withdraw your consent for the use of data already collected about you, but you must do this in writing to Michelle Bentsen at mab673@sn.rutgers.edu.

Who can you call if you have any questions?
If you have any questions about taking part in this project you can call the principal investigator:

Michelle Bentsen
5 Tower Nursing Unit
(609) 558-9557

If you have any questions about your rights as a research subject, you can call:

IRB Director
(973)-972-3608 Newark

And

Human Subject Protection Program
973-972-1149 - Newark

AGREEMENT TO PARTICIPATE

1. Subject consent:

I have read this entire form, or it has been read to me, and I believe that I understand what has been discussed. All of my questions about this form or this study have been answered. I agree to take part in this research study.

Subject Name:_____

Subject Signature:_____ Date:_____

2. Signature of Investigator/Individual Obtaining Consent:

To the best of my ability, I have explained and discussed the full contents of the study including all of the information contained in this consent form. All questions of the research subject and those of his/her parent or legally authorized representative have been accurately answered.

Investigator/Person Obtaining Consent (printed name):_____

Signature:_____ Date: _____

Appendix G

Lesson Plan: "*5 A's* to Smoking Cessation"

Learning Objectives:

1) Discuss the importance of providing smoking cessation education.
2) Review the 5 A Smoking Cessation protocol for healthcare providers
3) Offer additional resources: badge card, educational brochures.

Total Time: 30 min	Activity
5 minutes	Welcome Briefing: Purpose Learning Objectives
5 minutes	Background Survey
20 minutes	Education Intervention: Smoking Cessation Counseling Presentation/Lecture by Michelle Bentsen Smoking Cessation Review/Importance 5 A Counseling Strategy Review of new unit smoking protocol Discussion, question & answer
	Intervention Evaluation

Supplies Needed:

-Nursing break room on 5 Tower nursing unit
-Printed Materials: Pre/Posttest surveys, educational handouts, 5 A badge card
-Pencils/Pen
-Light refreshments (bagels, coffee)

Appendix H

Nurse Badge Card

ASK: Every patient on admission to unit:
* Do you smoke
* Packs per day x how many years?

ADVISE:
Provide brief, clear, personalized message about quitting smoking

ASSESS: Ask patient about their readiness to quit

ASSIST:
Educational handouts
Provide counseling
Monitor for withdrawal
Offer NRT >> call MD

ARRANGE: Follow up
NJ Quitline:
1-866-657-8677
Rutgers's Program:
732-235-8222

5 A's of Smoking Cessation

Appendix I

ID Number: _____

Background Survey

Instructions: *This survey will help collect some background information on your current practices and awareness of smoking cessation counseling. Completion of the survey should only take 5-10 minutes. Please read each question and respond to the question as it applies to you. All answers will be kept confidential.*

1. How long have you been a registered nurse?
    a. <1 year
    b. 1-2 years
    c. 2-5 years
    d. 5+ years

2. Do you use tobacco products? (Ex: cigarettes, cigars, chewing tobacco)
    a. Yes
    b. No

3. Have you ever heard of the US PHS Clinical Practice Guidelines (5A's) for smoking cessation?
    a. Yes
    b. No

4. Please indicate with a mark on the line: How often do you ask your patients about their smoking status?

1	2	3	4	5
Always	Usually	Sometimes	Seldom	Never

5. Please indicate with a mark on the line: How often do you advise your patients to quit smoking?

1	2	3	4	5
Always	Usually	Sometimes	Seldom	Never

6. Please indicate with a mark on the line: How often do you assess your patient's readiness to quit smoking?

1	2	3	4	5
Always	Usually	Sometimes	Seldom	Never

7. Please indicate with a mark on the line: How often do you assist your patient in smoking cessation using any variety of smoking cessation interventions?

1	2	3	4	5
Always	Usually	Sometimes	Seldom	Never

8. Please indicate with a mark on the line: How often do you arrange for your patients to follow up with smoking cessation resources once they are discharged from the hospital?

1	2	3	4	5
Always	Usually	Sometimes	Seldom	Never

9. Do you think nurses are able to impact a patient's ability to quit smoking?
    a. Yes
    b. No
    Please explain:

10. Please indicate with a mark on the line: How prepared are you to provide tobacco cessation interventions?

1	2	3	4	5
Strongly Prepared	Somewhat Prepared	Neutral	Somewhat Unprepared	Strongly Unprepared

11. In your opinion, what are the biggest barriers to carrying out smoking cessation interventions on this unit?

12. What resources do you need to effectively provide smoking cessation interventions?

Appendix J

ID Number: _____

Quality Improvement Evaluation

Instructions: *This survey will help evaluate the smoking cessation program you attended and review the effectiveness of the new smoking protocol. Completion of the survey should only take 5-10 minutes. Please read each question and respond to the question as it applies to you. All answers will be kept confidential.*

1. Can you put the 5A's in correct order? Please number 1-5.
    a. Assess___
    b. Advise___
    c. Arrange___
    d. Ask___
    e. Assist___

2. Do you feel utilizing the 5A framework helps you deliver smoking cessation education more effectively?
    a. Yes
    b. No
    c. Somewhat
    d. Unsure

3. Did you find this training to be helpful?
    a. Yes
    b. No
    c. Somewhat
    d. Unsure

4. Please indicate with a mark on the line: After this training, how often do you ask your patients about their smoking status?

    _____

    1 2 3 4 5

    Always Usually Sometimes Seldom Never

5. Please indicate with a mark on the line: After this training, how often do you advise your patients to quit smoking?

    _____

    1 2 3 4 5

Always	Usually	Sometimes	Seldom	Never

6. Please indicate with a mark on the line: After this training, how often do you assess your patient's readiness to quit smoking?

1	2	3	4	5
Always	Usually	Sometimes	Seldom	Never

7. Please indicate with a mark on the line: After this training, how often do you assist your patient in smoking cessation using any variety of smoking cessation interventions?

1	2	3	4	5
Always	Usually	Sometimes	Seldom	Never

8. Do you think nurses are able to impact a patient's ability to quit smoking?
   a. Yes
   b. No
   Please explain:

9. Please indicate with a mark on the line: After this training how prepared are you to provide tobacco cessation interventions?

1	2	3	4	5
Strongly Prepared	Somewhat Prepared	Neutral	Somewhat Unprepared	Strongly Unprepared

10. Describe how your practices have changed (if at all) in offering smoking cessation resources to patients.

11. Do you have any additional thoughts, recommendations or suggestions on how we can improve smoking cessation practices offered on this unit?

Appendix K

Chart Review Log

Medical Record Number	**Patient identified as smoker in admission document Yes/No**	**Nurse care plan documented smoking education. Yes/No**	**Nicotine Replacement Therapy ordered? Yes/No**

Appendix L

DNP Project Timeline

Completion:	Pre-Design	Design	Implementation	Evaluation
Winter 2016-Spring 2017	Met with Stakeholders at Rutgers Tobacco Dependence Program. Spoke with Rutgers faculty about project ideas.			
Spring 2017 (January-February)	1) PICO Question developed 2) Theoretical Model 3) Review of Literature: Tables of Evidence on smoking cessation interventions on patient's intention to quit and the effect of an educational or training intervention on nurse's implementation of a smoking cessation program.			
Spring 2017 (January-April)		Began draft of Project Proposal		
Spring 2017 (April-May)		Project proposal to committee. Once approval is obtained, to be submitted to IRB.		

Summer- Fall 2017		IRB approval	Intervention begins once IRB approval obtained	
Fall-Winter 2017				Data collection and statistical analysis
Winter-Spring 2017				Final project manuscript preparation.
Spring 2018				Final project manuscript submission and poster presentation at Rutgers.

Appendix M

Budget

Item	**Budget**	**Actual Cost**
Printed Materials	$100.00	$20.00 (many donated)
Pocket Cards	$100.00	$25.00
Poster Printing	$100.00	$100.00
Refreshments for Educational sessions (2)	$100.00	$80.00
Final Bound Copy of Project Manuscript	$200.00	$200.00
Total Cost:	$600.00	$425.00

DNP Team Signatures

Title of DNP Project: Smoking Cessation in Hospital units

DNP Student Information:

Name: Michelle Bentsen A# _____

Rutgers email: mab673@sn.rutgers.edu Phone: 609-558-9537

Address: 132 South Street Hightstown NJ 08520

I have reviewed the Rutgers DNP Toolkit and understand my responsibilities: Y N

Signature: Michelle Bentsen Date: 1/30/17

DNP Team Members:

DNP Chair (Name & Credentials): Irina Benenson, DNP, APN

I have reviewed the Rutgers DNP Toolkit and understand my responsibilities: Y N

Signature: IBenen Date: 1/30/17

DNP Co Chair (Name & Credentials): ~~Dr~~ Michael Steinberg

I have reviewed the Rutgers DNP Toolkit and understand my responsibilities: Y N

Signature: [signature] Date: 4/28/17

Co-chair

DNP ~~Team Member~~ (Name & Credentials): Manish Patel

I have reviewed the Rutgers DNP Toolkit and understand my responsibilities: Y N

Signature: [signature] Date: 4/28/17

DNP Co Chair Donna L Richardson

Signature: Donna L Richardson date 4/28/17

Standardizing Smoking Cessation Intervention for Patients in an Acute Care Setting

Michelle Santoro, DNP (c), RN, PCCN and Irina Benenson, DNP, NP-C, CEN
Rutgers University School of Nursing

BACKGROUND

- Smoking is the **number one** cause of preventable death (Patel & Steinberg, 2016).
- Smoking cessation counseling has been identified as the **most effective** preventative care service offered (Lemaire, Bailey & Leischow, 2015).
- Hospitalization has been identified as a "**golden opportunity**" to stress the importance of smoking cessation (de Hoog et. al., 2016).
- More than one-half of patients hospitalized for cardiac problems will continue to smoke once they are discharged (Kazemzadeh, Manzari, & Pouresmail, 2016).
- Lack of structure and guidelines within a hospital setting leaves room for the omission of or varying approaches to tobacco cessation interventions
- Utilizing front line nursing staff in the delivery of smoking cessation counseling optimizes staff that are exposed to patients for long periods of time

PURPOSE

- Address the lack of consistency in smoking cessation education within a hospital setting

AIMS & OBJECTIVES

- Improve smoking cessation among hospitalized patients.
  1. Improve utilization of nicotine replacement therapy while hospitalized.
- Increase nurse awareness and adherence to carrying out evidence-based cessation counseling for hospitalized patients identified as smokers
  1. To improve nurse awareness and adherence regarding the delivery and effectiveness of the 5A smoking cessation guideline.
  2. To improve nursing documentation of smoking cessation counseling as they provide it to patients.

Special Acknowledgement: Dr. Manish Patel, Dr. Michael Steinberg and Donna Richardson who served as project committee members

METHOD

❖ Design
- Quality improvement project utilizing a quasi experimental design

❖ Sample
- Convivence sample of 14 Registered Nurses on a medical surgical/telemetry unit

❖ Intervention
- Education sessions for nurses conducted on two separate dates
  - Content included: Smoking cessation review/importance, 5 A's counseling strategy and review of new unit smoking protocol
- Resources provided to unit as reinforcement: nurse badge cards, pamphlets, educational flyers/booklets

❖ Data Collection
- Study participants demographics
- Pre- and post- surveys to assess:
  - Nurses awareness and adherence to the 5 A's protocol
  - Perceived nurse influence on a patient's ability to quit
  - Barriers in carrying out cessation counseling
  - Change to practice
- Pre- and post- intervention chart review
  - Data collection of:
    - Patient smoking status on admission
    - Nicotine replacement therapy order
    - Nurse documentation of smoking cessation education in care plan

❖ Data Analysis
- Categorical data was analyzed using chi-squared test for non-paired groups and McNemer test for paired groups
- Ordinal data was analyzed utilizing Wilcoxon signed ranks test
- SPSS statistical package was used for the analysis

FINDINGS

❖ Quantitative Analysis
- Numerically more care plans documented cessation education after intervention
  - 0 out of 20 versus 5 out of 31 (p=0.059)
- Numerically more NRT orders after intervention
  - 2 out of 20 versus 5 out of 31 (p=0.535)
- Increased frequency of **Asking** patients about smoking status (Z=-2.203; p= 0.028)
- Increased frequency of **Advising** patients to quit smoking (Z=-2.414; p=0.016)
- **Increased frequency of Assessing patients readiness to quit** (Z= -2.810; p=0.005)
- **Increased frequency of Assisting patients in cessation** (Z=-2.987; p=0.003)
- **Improvement in preparedness of carrying out smoking cessation education** (Z=-2.913; p=0.004)
- Nurses perceived ability to impact a patient's cessation attempt
  - No difference pre and post (N=14; p=1.00)
- 14 out of 14 nurses found the education session helpful
- Only 2 out of 14 nurses had previously heard of the 5 A USPHS Clinical Practice Guideline prior to the protocol implementation
- 11 out of 14 nurses could correctly put the 5A's in order post- intervention

5A's: ASK → ADVISE → ASSESS → ASSIST → ARRANGE

References
de Hoog, N., Bolman, C., Berndt, N., Kers, E., Mudde, A., de Vries, H., & Lechner, L. (2016). Smoking cessation in cardiac patients: The influence of action plans, coping plans and self-efficacy on quitting smoking. *Health Education Research*,31(3), 350-362. doi: 10.1093/her/cyv10
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Lemaire, R. H., Bailey, L., & Leischow, S. J. (2015). Meeting the tobacco cessation coverage requirement of the patient protection and affordable care act: State smoking cessation quitlines and cost sharing. *American Journal of Public Health, 105*(5), S699-705. doi: 10.2105/ajph.2015.302869
Patel, M. S., & Steinberg, M. B. (2016). In the Clinic. Smoking cessation. *Annals of Internal Medicine, 164*(5), ITC33-ITC47. doi: 10.7326/AITC201603010

QUALITATIVE ANALYSIS

❖ Themes in Open Ended Responses
- Barriers on unit/Resources needed
  - Lack of time, resources, focus, support
  - Patient non-compliance, unwillingness
- Practice changes
  - Increased accessibility to resources, organization and effectiveness
- Additional needs
  - Continuing education
  - NRT access
  - Documentation change

CONCLUSIONS

- Numeric improvement was found in Ask, Advise, Assess and Assist steps in the 5A's protocol after protocol implementation and education sessions
- Nurses reported having increased methods and materials for Arranging for follow up for patients post intervention
- While nurses identified that they had the ability to impact a patient's ability to quit smoking both pre and post intervention, numerous barriers were identified in carrying out cessation interventions

IMPLICATIONS ON NURSING PRACTICE

- Providing education on a standardized approach and provided resources (brochures, badge cards, handouts) can increase the implementation of smoking cessation education
- Even though nurses generally feel they can make a difference on patient's cessation status, many barriers (time, patient non-compliance and lack of resources) may influence actual follow through.
- Additional research should be performed to evaluate strategies to increase nurse documentation rates and possible changes within documentation systems to increase compliance.

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THE STATE UNIVERSITY OF NEW JERSEY

Standardizing Smoking Cessation Intervention for Patients in an Acute Care Setting

DNP candidate: Michelle Santoro
DNP committee chair: Dr. Irina Benenson DNP, FNP-C
DNP committee members:
Dr. Michael Steinberg MD, MPH, FACP
Dr. Manish Patel MD
Donna Richardson MSW, LCSW, LCADC, CTTS

Rutgers University School of Nursing
Date 1/19/2018

RUTGERS

Background

- Smoking is identified by the CDC as the continued leading cause of **preventable** death (Patel & Steinberg, 2016)
- The US Preventative Services Task Force ranks smoking cessation counseling as the **number one** most effective preventable care service (Lemaire, Bailey & Leischow, 2015)
- Nationally only **4-6%** of smokers are successful in quitting each year (CDC, 2017b)
- **More than** ½ of patients hospitalized for cardiac problems will continue to smoke once discharged (de Hoog et al., 2016)
- Medicare and Medicaid expenditures are approximately **$85 billion** towards smoking related disease
- All-cause mortality in smokers versus non-smokers is **3-5 times** greater (CDC, 2017b)

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Needs analysis

Internal		External	
Strengths	**Weaknesses**	**Opportunities**	**Threats**
-Support from manager and director in implementation of new project. -Relationships with unit nurses can endorse support of head researcher. -Understanding of staff nurse work demands through head researcher background. -Trained nurses and doctors who have a good understanding of their patient population.	-Staff nurse time constraints. -Nurse perceptions or established beliefs in how smoking cessation counseling should be carried out. -Patient engagement in a smoking cessation program. -Potential staff resistance to change.	-Growing need to focus on reducing re-admissions. -Accreditation body stressing importance of patient education and need for smoking cessation counseling provided inpatient. -Stressed importance of increasing patient centered and family centered care through individualizing patient care plans.	-Changing landscape within newly merged hospital system. -Lack of commitment to smoking cessation programs on an organization level. -Loss of funding to smoking cessation programs.

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Aims and objectives

The overarching aims of this project were to:

1. Improve smoking cessation among hospitalized patients.
   - Improve utilization of nicotine replacement therapy while hospitalized.
2. Increase nurse awareness and adherence to carrying out evidence-based cessation counseling for hospitalized patients identified as smokers.
   - To improve nurse awareness and adherence regarding the delivery and effectiveness of the 5A smoking cessation guideline.
   - To improve nursing documentation of smoking cessation counseling as they provide it to patients.

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Literature review

- Clinical Question:
  - Among registered nurses working in the hospital (P), what is the effect of an educational or training intervention (I) on their current beliefs (O) and implementation of a smoking cessation program (O)?
- CINAHL and PubMed
- Literature review by Kasemzadeh, Manzari and Poursemall (2016)
  - Smoking cessation counseling offered by nurses plays a key role in patients quitting when discharged
  - Offering supporting documents (booklets, brochures) aid in interventions

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Literature review

- Katz. et al., (2013)
  - Multimodality approach
    - Found effective in improving quality of smoking cessation services
  - After education and guideline implementation using 5A strategy:
    - nurses reported more positive attitudes towards offering smoking cessation counseling
    - > likelihood of nurses providing counseling to smokers admitted
- Sheffer, Barone and Anders (2011)
  - 1-hour training on smoking counseling for nurses
    - **Increased** motivation, knowledge, confidence, perceived importance, effectiveness and preparedness
- Sarna, et al., (2009)
  - Nurses who are **aware** and receive **training** report increased frequency of administering smoking interventions to patients

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Literature review

- Dawood, et al., (2008)
  - Admission to a hospital with inpatient smoking cessation program
    - Higher levels of quitting after discharge
- De Hoog, et al., (2016)
  - Planning quit strategies while hospitalized
    - Enhances action and coping with difficult situations after discharge
- Clinical Practice Guidelines
  - Even brief tobacco interventions are effective (Fiore, 2008)
    - Positive correlation in effectiveness and treatment intensity
  - Training is an important part of successful implementation (West, et al., 2000)
  - Referral of smokers to services prior to discharge aid in cessation attempts (West, et al., 2000)

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Theoretical framework

- Ottawa Model of Research Use (OMRU)
- Theory accepts: (Graham & Logan, 2004)
  - Research is interactive synergistic process
  - Process is not unidirectional
  - Patients play a key role in all elements of the process
  - Both societal and health-care environments will affect all aspects of the process

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Methodology

- **Setting**
  - The Robert Wood Johnson University Hospital (RWJUH)
  - 965-bed hospital
  - 5 Tower Nursing Unit
    - Cardiac medical surgical unit
    - 31 beds
    - 4 of which are designated for intermediate care patients
- **Participants**
  - Staff nurses on 5 Tower nursing unit
    - Day shift roster includes 19 employees who are either full time, part time or listed as per diem
    - PI and head nurse excluded, Sample size: 17

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Methodology

- **Intervention**
  - Didactic program offered to all day shift nurses (2 sessions)
    - Instructed on new protocol (5 A's guided)
    - Provided badge card & educational handouts
  - Background Survey
    - Prior to program
  - Quality Improvement Survey
    - 1-month after project implementation

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Methodology

- **Intervention**
  - Pre-Intervention & Post-Intervention Chart Review
    - Assess documentation of smoking cessation to patients identified as smokers
    - Sunrise Clinical Manager by Allscripts
    - Charts reviewed for:
      - Nicotine Replacement Therapy orders
      - Nursing documentation of smoking counseling under Nurse Care Plan
      - Logged using Medical Record Numbers
      - No other personal information retrieved

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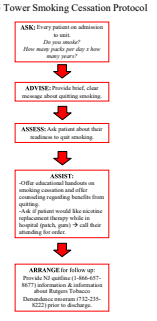
Methodology



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Methodology

Outcome measures and statistical analysis

- Descriptive statistics (frequencies, %): demographic data
- Descriptive statistics (frequencies, %): completed charts
  - Fisher's exact test: to compare frequencies of charts with completed documentation pre- and post- intervention
- Wilcoxon signed rank test: compare ordinal data of pre- and post-nurse survey results
- SPSS was used to complete data analysis
- Open-ended response questions: coded for themes

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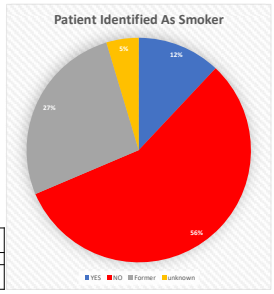
Chart Review Results

- Pre- Intervention Chart Review:
  - 20 Charts
  - 0 Care Plans documented (0%)
  - 2 Nicotine Replacement orders (11%)
- Post- Intervention Chart Review
  - 258 charts, 1 month period
  - 31 smokers, 69 former smokers, 146 non-smokers, 12 unknown
  - Out of the 31 smokers
    - 5 Care Plans documented (16%)
    - 5 Nicotine Replacement orders (16%)

Type of documentations	Pre-intervention, frequencies (%)	Post-intervention, frequencies (%)	p-value
Care plan	0 (0 %)	5 (16 %)	0.072
Nicotine replacement order	2 (11%)	5 (16%)	0.429



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Nurse Survey Results

- A convenience sample of 14 nurses (82%)
- 100% follow up response rate with both pre-and post-surveys

Demographics

Characteristics	Frequency	%
Experience		
<1 year	2/14	14.29%
1-2 years	0/14	0.00%
2-5 years	3/14	21.43%
5+ years	9/14	64.29%
Use of Tobacco Products		
Yes	1/14	7.14%
No	13/14	92.86%
Previously heard of 5A protocol		
Yes	2/14	14.29%
No	12/14	85.71

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Nurse Survey Results

Question	Scale	Negative sum rank	Positive sum rank	p-value
Asking about smoking status	From 1 (always) to 5 (never)	33.50	2.50	**0.028**
Advising to quit smoking	From 1 (always) to 5 (never)	28.0	0	**0.016**
Assessing level of readiness to quit	From 1 (always) to 5 (never)	73.50	4.5	**0.005**
Assisting in attempt to quit	From 1 (always) to 5 (never)	87.5	3.5	**0.003**
Perceived preparedness in offering interventions	From 1 (always) to 5 (never)	55.0	0.0	**0.04**

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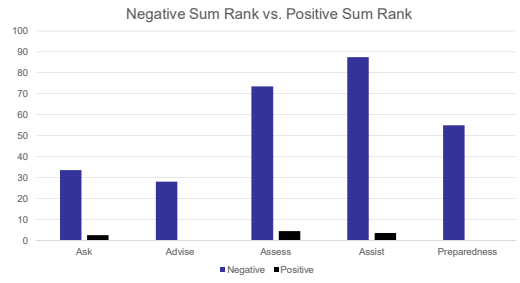
Nurse Survey Results



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Nurse Survey Results

- Arrange for follow up in was asked Likert Style in the pre-survey and open ended format post-intervention
  - Pre-Survey results
    - sum: 57, mean: 4.07
  - Post-Survey result themes
    - increased effectiveness and ease in arranging for follow up
    - increased accessibility to resources (pamphlets, follow up information)
    - increase in offering of information to patients.
- Nurses' perceived ability to impact a patient's quit attempt

Question	Scale	p-value
Perceived ability to impact	Yes/ no	1.000

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Nurse Survey Results

- Knowledge of *5 A's* protocol
  - Post survey found that 11 out of 13 (85%) were able to correctly organize the *5 A's* protocol
  - Two were incorrect (15%)
  - One question was unanswered
- *5 A's* framework to be helpful
  - Eleven out of 13 responses (85%)
  - Two (15%) found it somewhat helpful
  - One did not answer
- Training to be helpful
  - Fourteen out of 14 (100%)

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Nurse Survey Results

Open Ended Questions & Themes

- Do you think nurses are able to impact a patient's ability to quit smoking
  - patient willingness to quit and awareness
  - nurse's ability to empower, influence, and educate
  - building trusting relationships
- Barriers and needed resources for the unit to provide smoking cessation counseling
  - a lack of time, focus, and resources (pamphlets, educational tools)
  - a lack of accessibility to resources
  - non-compliance or unwillingness from patients
  - lack of support and financial resources for patients such as a counselor

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Nurse Survey Results

Open Ended Questions & Themes

- Changes to practice after the intervention
  - increased effectiveness, ease, organization, and thoroughness of counseling
  - increased accessibility to resources (pamphlets, follow up, information)
  - increase in assessment by nurses and offering of information to patients
- Further suggestions for a smoking cessation program on this unit.
  - increased ease of obtaining nicotine replacement orders
  - continued supply of educational resources
  - continued educational offerings about smoking counseling
  - changes to the documentation system

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Discussion

- Major findings of this project
  - Statistically significant increase in frequency of nurses carrying out four out of the *5 A's* (ask, advise, assess, assist)
  - Statistically significant increase in nurse preparedness in offering smoking counseling post-intervention
  - Findings are consistent existing data that also demonstrated an increase in nurse delivery of smoking cessation counseling after education and training on how to carry out such services
    - (Katz et al., 2013; L. Sarna et al., 2009; Sheffer et al., 2011).
  - Self- reported increase in arranging for follow up (fifth A, arrange)

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Discussion

- Numerical increase of nursing documentation in care plans and nicotine replacement orders
- Overall improvement in nurse awareness of the *5 A's* post-intervention
- Reported improvement in nurse practice due to the ease, support and resources given through this protocol.
- Many major barriers were overcome through intervention implementation
- Nurses from this project believed they could impact a patients ability to quit smoking both pre- and post- intervention
  - This differs from other studies
  - Barriers may get in the way of actual follow through of action

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Conclusions and implications for practice

The aims of the project were met

- increase in delivery of smoking cessation counseling, and improving nurse awareness and adherence to a protocol

This project can contribute to already existing evidence showing

- the importance of standardizing smoking cessation counseling on hospital in patient units
- providing additional training to the staff nurses asked to carry out these services

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Conclusions and implications for practice

Increasing patients access to these standardized protocols

- may aid in overall quit rates
- help in improving population health
- reducing healthcare costs of smoking related disease

Further research should be performed to

- examine barriers that may exist on different hospital units
- sustainability of programs over time

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Questions

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CITI PROGRAM

Completion Date 30-Jan-2015
Expiration Date 29-Jan-2018
Record ID 15151650

This is to certify that:

Michelle Bentsen

Has completed the following CITI Program course:

Human Research (Curriculum Group)
Biomedical / Clinical Research Investigators (Course Learner Group)
1 - Basic Course (Stage)

Under requirements set by:

Rutgers- The State University of New Jersey (All Campuses)

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?w89a488e5-a436-400b-8803-169acd4934c7-15151650

CITI PROGRAM

Completion Date 11-Dec-2017
Expiration Date 10-Dec-2020
Record ID 24050607

This is to certify that:

Michelle Bentsen

Has completed the following CITI Program course:

Human Research (Curriculum Group)
Biomedical / Clinical Research Investigators (Course Learner Group)
2 - Refresher Course (Stage)

Under requirements set by:

Rutgers- The State University of New Jersey (All Campuses)

CITI
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RUTGERS eIRB

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Health Sciences IRB - Newark
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Newark, NJ 07107
Phone: 973-972-3608

DHHS Federal Wide Assurance Identifier: FWA00003913
IRB Chair Person: Cheryl Kennedy
IRB Director: Carlotta Rodriguez
Effective Date: 8/8/2017
Approval Date: 8/4/2017
Expiration Date: 8/3/2018

eIRB Notice of Approval for Initial Submission # Pro20170000601

STUDY PROFILE

Study ID: Pro20170000601
Title: Standardizing Smoking Cessation Intervention for Patients in an Acute Care Setting

Principal Investigator:	Michelle Bentsen	**Study Coordinator:**	Michelle Bentsen
Co-Investigator(s):	Irina Benenson		
Approval Cycle:			Twelve Months
Risk Determination:	Minimal Risk		
Review Type:	Expedited	**Expedited Category:**	(4)
Subjects:	20		

CURRENT SUBMISSION STATUS

Submission Type:	Research Protocol/Study	**Submission Status:**	Approved
Approval Date:	8/4/2017	**Expiration Date:**	8/3/2018

Pregnancy Code:	No Pregnant Women as Subjects	**Pediatric Code:**	No Children As Subjects	**Prisoner Code:**	No Prisoners As Subjects

Protocol:	DNP Project Proposal	**Consent:**	Nurse Consent Form	**Other Materials:**	Recruitment Flyer Chart Review Log Quality Improvement Evaluation Background Survey for Nurses

*** Study Performance Sites:**

Robert Wood Johnson University Hospital	1 Robert Wood Johnson Place in New Brunswick, New Jersey 08901

ALL APPROVED INVESTIGATOR(S) MUST COMPLY WITH THE FOLLOWING:

1. Conduct the research in accordance with the protocol, applicable laws and regulations, and the principles of research ethics as set forth in the Belmont Report.

2. **Continuing Review:** Approval is valid until the protocol expiration date shown above. To avoid lapses in approval, submit a continuation application at least eight weeks before the study expiration date.

3. **Expiration of IRB Approval:** If IRB approval expires, effective the date of expiration and until the continuing review approval is issued: **All research activities must stop unless the IRB finds that it is in the best interest of individual subjects to continue. (This determination shall be based on a separate written request from the PI to the IRB.) No new subjects may be enrolled and no samples/charts/surveys may be collected, reviewed, and/or analyzed.**

4. **Amendments/Modifications/Revisions**: If you wish to change any aspect of this study, including but not limited to, study procedures, consent form(s), investigators, advertisements, the protocol document, investigator drug brochure, or accrual goals, you are required to obtain IRB review and approval prior to implementation of these changes unless necessary to eliminate apparent immediate hazards to subjects.

5. **Unanticipated Problems**: Unanticipated problems involving risk to subjects or others must be reported to the IRB Office (45 CFR 46, 21 CFR 312, 812) as required, in the appropriate time as specified in the attachment online at: https://orra.rutgers.edu/hspp

6. **Protocol Deviations and Violations**: Deviations from/violations of the approved study protocol must be reported to the IRB Office (45 CFR 46, 21 CFR 312, 812) as required, in the appropriate time as specified in the attachment online at: https://orra.rutgers.edu/hspp

7. **Consent/Assent**: The IRB has reviewed and approved the consent and/or assent process, waiver and/or alteration described in this protocol as required by 45 CFR 46 and 21 CFR 50, 56, (if FDA regulated research). Only the versions of the documents included in the approved process may be used to document informed consent and/or assent of study subjects; each subject must receive a copy of the approved form(s); and a copy of each signed form must be filed in a secure place in the subject's medical/patient/research record.

8. **Completion of Study:** Notify the IRB when your study has been stopped for any reason. Neither study closure by the sponsor or the investigator removes the obligation for submission of timely continuing review application or final report.

9. The Investigator(s) did not participate in the review, discussion, or vote of this protocol.

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Rutgers IRB Closeout Form

1/18/18
(Today's Date)

I, Michelle Santoro, a candidate for DNP Program
(Name)
expecting to graduate on May 13, 2018 affirm that I have
(Date)
(please check one):

☑ have been formally notified by the RBHS IRB office that my request to close my protocol has been approved. A copy of this approval attached.

☐ have applied to the RBHS IRB office for closure of the IRB protocol related to my PROJECT research. A dated copy of this application and final report is attached.

I understand that if the IRB does not approve of this closure before the date of the graduation, my diploma may be held. I also understand that if the IRB requests clarifications or amendments to my report that I am responsible for doing so before my University web access and email are terminated. Failure to do so may place my committee chair's name on IRB probation and may adversely affect other students' ability to work with this faculty member.

M Santoro
Signature of DNP Program Candidate

Activity Details (Final Report Completed)

The Final Report (Continuing Report) has completed. The item is moved to the Archived state.

Author:	Termerra Flournoy (Institutional Review Board (IRB))
Logged For (Study):	Smoking Cessation
Activity Date:	1/18/2018 12:51 PM

Property Changes | Documents | Notifications

Property	Old Value	New Value
activityType		_Protocol_Final Report Completed
Study		Pro20170000601
author		Termerra Flournoy
name		Final Report Completed
Study.status	Approved	Closed
Release Action Letter to Study Staff: 8D55E326E6B306A (name)		Released Action Letter to Study Staff
Continuing Review: CR00007074 (status)	IRB Chair / IRBD Correspondence Review	Approved
Continuing Review: CR00007074 (dateEnteredState)	1/18/2018 11:31 AM	1/18/2018 12:51 PM
Continuing Review: (Current Agenda Item)	ID00044964	
Set of Activity		Added elements: • 8D55E326E6B306A
Set of Person		Added elements: • Michelle Bentsen
Set of Person		Added elements: • Michelle Bentsen
Set of Person		Added elements: • Michelle Bentsen

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Rutgers School of Nursing
Stanley S. Bergen Building
Rutgers, The State University of New Jersey
65 Bergen Street
Newark, NJ 07101-1709

Date: 04/20/2017

Re: Letter of Cooperation For 5 Tower Nursing Unit at Robert Wood Johnson University Hospital

Dear Michelle Bentsen,

This letter confirms that that I, as an authorized representative of 5 Tower Nursing Unit, allow the PI access to conduct study related activities at the listed site(s), as discussed with the PI and briefly outlined below, and which may commence when the PI provides evidence of IRB approval for the proposed project.

- **Research Site(s)**: 5 Tower Nursing Unit, Robert Wood Johnson University Hospital: 1 Robert Wood Johnson Place, New Brunswick, NJ 08901.
- **Study Purpose:** The purpose of this study is to increase smoking cessation counseling provided by nurses to patients who identify themselves as active smokers while in the hospital.
- **Study Activities:** Staff nurses will be educated by the PI through two meetings held during working hours in the staff break room on the importance and need of the intervention. Staff nurses will be given a survey to assess their current understanding and utilization of smoking cessation counseling and asked to provide brief smoking cessation counseling to patients who identify themselves as smokers while hospitalized. A secondary survey will be offered at the end of the trial period to measure differences in practice. Patients who identify as smokers will also be asked to complete a worksheet measuring their readiness to quit smoking on admission and prior to discharge. Additional educational resources will also be provided to patients to aid in smoking cessation. Electronic charts will be reviewed by the PI to measure compliance of carrying out the counseling.
- **Subject Enrollment:** Any adult (>18) patient hospitalized on 5 Tower nursing unit who identifies themselves as a current smoker, who 1) speaks English, 2) has normal mentation.
- **Site(s) Support**: The support of the site agrees to allow staff nurses to receive education on project during working hours. The site also agrees to allow staff nurses to screen all patients on current smoking status, identifying qualifying subjects offering pre-and post surveys and providing smoking cessation counseling and educational materials as appropriate. The site will also allow the PI to retrieve patient data through chart review to measure compliance.
- **Data Management:** Data will be collected through electronic chart review, nurse and patient survey results. The outcomes being measured are nurse compliance with the smoking cessation counseling, increased nurse awareness and education regarding the 5A smoking cessation protocol and increase patient readiness to quit prior to discharge. The PI will review charts to assess compliance in providing education if patients are identified as current smokers. All patient information will be de-identified and no information will be removed from premises with patient identifiers.
- **Anticipated End Date:** October 2017.

We understand that this site's participation will only take place during the study's active IRB approval period. All study related activities must cease if IRB approval expires or is suspended. I understand that any activities involving Personal Private Information or Protected Health Information may require compliance with HIPAA Laws and Rutgers Policy.

Our organization agrees to the terms and conditions stated above. If we have any concerns related to this project, we will contact the PI. For concerns regarding IRB policy or human subject welfare, we may also contact the Rutgers IRB (see orra.rutgers.edu/hspp).

Regards,

Eileen Naviello 4/25/17

Signature ***Date Signed***

EILEEN M NAVIELLO MSN RN NSG Director

Full Name ***Job Title***

Appendix 1

Doctor of Nursing Practice
Proposal Evaluation Framework

Student's Name: Michelle Bentsen

Title of DNP Project: Standardizing Smoking Cessation Intervention for Patients in an Acute Care Setting

	Satisfactory as Presented	Satisfactory with the following recommendations	Unsatisfactory
Problem			
Background information./literature supports problem	✓		
Problem/change clearly identified	✓		
Scope of project realistic and appropriate	✓		
Other:			
Analysis/Framework			
Need, feasibility and significance are clearly presented	✓		
Literature, benchmarks and supporting data provided and appropriate	✓		
Framework (theoretical/conceptual/practice) is evident and appropriate	✓		
Other:			
Project Objectives			
Objectives stated in feasible and measurable terms	✓		
Evaluation measures linked to objectives	✓		
Other:			
Action Plan/Method			
Appropriate for objectives	✓		
Clear rationale for actions/method	✓		
Setting and group clearly described	✓		
Tools/measures described	✓		
Resources/supports and risks/threats and benefits noted	✓		

Analysis/Evaluation plan delineated	✓		
Timeframe is feasible	✓		
Approvals			
Informed Consent, if necessary, meets human subject requirements	✓		
All approvals are in place, including: (List approvals).	✓		
Writing and Organization			
APA format followed appropriately; clear writing	✓		
Proposal submitted to Turn-It-In; originality report attached	✓		

a. **Accept the proposal.**
Doctoral Committee Chair will file approval of the DNP Project Proposal on behalf of the Doctoral Committee. Once the DNP Project Proposal is approved, the student becomes a candidate and may write DNP(c) after his or her name until graduation at which time the DNP candidate will be granted the degree along with the rights and privileges awarded by the degree.

b. **Conditionally accept with minor revisions and no re-review.**
The student will file a final/revised Project Proposal to Doctoral Committee Chair within one month of the proposal defense meeting.

c. **Require minor or major revisions and re-review.**
Revisions required: The student must develop a significantly revised or new proposal. The Doctoral Committee Chair will work with the student on the revision. The Committee will review the new proposal and all prior steps will be repeated.

d. **Reject the proposal.**
The student must develop a significantly revised or new proposal. The Doctoral Committee Chair will work with the candidate on the revision. The Doctoral Committee will review the new proposal and all prior steps will be repeated.

Doctoral Committee Chair's Signature: _____

Doctoral Committee Member's Signature: _____

Doctoral Student's Signature: _____

Date: 4/28/17

Appendix 2

Doctor of Nursing Practice
Project Final Evaluation Framework

Student's Name: Michelle Santoro

Title of DNP: Standardizing Smoking Cessation Intervention for Patients in an Acute Care Setting

1 = Very poorly 2 = Poorly 3 = Good 4 = Very Good 5 = Excellent						
	1 (Fail)	2	3	4	5	Comments
I. DNP Components						
The candidate addresses each DNP component:					✓	
Background and Significance						
Background information/literature demonstrates the focused need or problem.					✓	
Literature review supports significance/ relevance of problem/proposed project /intervention.					✓	
Need, feasibility and significance are clearly presented.					✓	
Problem Statement or Purpose					✓	
Problem/purpose clearly described.					✓	
Scope of project realistic and appropriate.					✓	
Theoretical Framework						
Framework (theoretical/conceptual/practice) is described/evident and applicable.					✓	
Project Description						
Literature, benchmarks and supporting data provided and organized into integrated synthesized summary					✓	
Objectives stated in feasible and measurable terms.					✓	
Congruence of organizations' strategic plan to project is described.					✓	
Project Design					✓	
Appropriate for objectives.					✓	
Clear rationale for actions/method.					✓	

Setting and group clearly described.					✓	
Implementation methods/tools/measures clearly described.					✓	
Resources/supports and risks/threats and benefits noted.					✓	
Time frame outlined.					✓	
Evaluation Plan						
Analysis/Evaluation plan coherent / consistent with project plan.					✓	
Evaluation measures linked to objectives.					✓	
Outcomes/evidence-based measures appropriate for objectives.					✓	
Tools/instruments described and linked to measures and objectives.					✓	
Method of analysis clearly described for each measurement.					✓	
Findings						
Findings organized in appropriate format.					✓	
Findings linked to problem statement, purpose objectives and evaluation plan.					✓	
Described the extent to which the objectives were achieved.					✓	
Addressed key facilitators and barriers that impacted the project's objectives.					✓	
Described unintended consequences (both positive and negative).					✓	
Recommendations/Implications						
Recommendations/Implications addressed for problem statement, supporting organization, key stakeholders, other settings, and student.					✓	
Included recommendations related to identified facilitators / barriers and unintended consequences.					✓	
Addressed any ongoing activities or evaluations outside the scope of the DNP Project.					✓	
Writing and Organization						
APA format followed appropriately; writing is scholarly and clear; appropriate for doctoral level education.					✓	
II. Project Synthesis						
Extent to which candidate met goals/aims of project. If not, appropriate rationale and					✓	

explanation provided.					✓	
Extent to which candidate integrated scientific curiosity and inquiry in project completion.					✓	
Extent to which candidate analyzed issues and provided critique of advanced nursing practice within the project.					✓	
Extend to which candidate demonstrated practice inquiry skills including appraising and translating evidence.					✓	
Evidence of candidate's ability to engage in collaborative partnership(s) in designing and implementing DNP project.					✓	
Ability of candidate to articulate state of current knowledge as it relates to advanced practice nursing in the health care system.					✓	

a. **Approve the DNP Project**
Once the DNP Project Proposal is approved, the student becomes eligible for graduation at which time the DNP candidate will be granted the degree along with the rights and privileges awarded by the degree.

b. **Conditionally approve the DNP Project with minor revisions**
The student will file a final/revised Project Proposal to Doctoral Committee Chair within two weeks of the proposal defense meeting.

c. **Reject the DNP Project**
The student must develop a significantly revised or new proposal. The Doctoral Committee Chair will work with the candidate on the revision. The Doctoral Committee will review the new proposal and all prior steps will be repeated.

Doctoral Committee Chair's Signature: _____

Doctoral Committee Member's Signature: _____

Doctoral Student's Signature: _____

Date: 1/19/2018

Michelle Santoro

Chair: 

DNP Project Hour Log

Date	Hours	Cumulative Hours	Activity	DNP Essential
1.5.2017	2	2	Idea brainstorming mtg with Donna Richardson	VI
1.9.2017	2	4	Idea brainstorming Mtg with Dr. Musanti	VI
1.27.2017	2	6	mtg with Dr.Benenson	VI
1.30.2017	2	8	Emails with potential committee members	IV
1.30.2017	1	9	Meeting with Medical Librarian for Lit Review guidance	I
2.2.2017	20	29	project preparation/development	I-III
2.3.2017	2	31	first committee meeting	V-VI
3.1.2017	1	32	meeting with nurse manager of 5 Tower	VI-VII
3.10.2017	4	36	Attendance to DNP presentations	V
3.12.2017	2	38	Meeting with 5 Tower nurses	II-V
3.14.2017	2	40	meeting with nurse director of 5 Tower	II
4.10.2017	25	65	project development	I-VII
4.25.2017	10	75	powerpoint creation & prep for project proposal to committee	III-IV
4.28.2017	4	79	Project proposal & meeting prior with committee chair	III-V
5.17.2017	20	99	Modifications to proposal & submission to IRB	II-VI
5.27-8.20.2017	10	109	IRB edits, phone calls with IRB members, emails with committee discussing project changes	IV-VI
8.14.2017	2	111	Calls to companies/emails to order free smoking cessation education information (CDC, AHRQ)	VI-VII
8.15-31.2017	16	127	Retrospective Chart Review	I, III
8.30.2017	1	128	meeting with donna regarding project implementation, supplies provided	V-VI
8.15-31.2017	10	138	Educational session prep: powerpoint, poster, handouts, ID badge card creation	VIII
8.31.2017	10	148	DNP Paper edits d/t IRB modifications: alterations to Aims/objectives/methods ect.	II-VII
9.2.2017	6	154	First Educational Session for Nurses & prep	III, VIII
9.9.2017	6	160	Second Educational Session for Nurses and prep	III, VIII
9.18.2017	1	161	meeting with committee chair for guidance moving forward with data colletion	IV, VI
9.13.2017	1	162	Meeting & update with Dr.Patel regading progress & brainstorming for moving forward	IV, VI
9.27.2017	2	164	meeting & update with Donna Richardson, meeting with graduate student in public health regarding delivery of smoking education	VII, VIII
9.28.2017	8	172	De-Identify and log pre test results	IV
10.2.2017	6	178	CV & personal statement	VIII
10.6.2017	4	182	preparation and submission of abstract to RWJ Research Day	I-III
10.7.2017	6	188	Personal website & linked in page	VIII
10.9-16.2-17	14	202	Collect post survey results	I,III, VII
10.10.2017	2	204	abstract edit & submission to ENRS conference	III, VII
10.16.2017	4	208	work on submission for DNP Outcomes Journal	VII
10.19.2017	4	212	Research for possible journals/ conferances to submit abstract to	V, VII
10.19-21.2017	24	236	Prospective Chart Review	I
10.21.2017	8	244	Poster preparation for RWJ Research Day	III, IV
10.19.2017	8	252	Maternal Child Health Symposium on use of substances (tobacco, other ilicit drugs) in pregnancy	V, VIII
10.23.2017	2	254	Meeting with committee chair and members to update on progress on implementation	III, VI
10.23-27.2017	40	294	Tobacco Dependence Training Seminar	I, VII, VIII
10.19-30.2017	24	318	formatting collected data & running statistical tests in SPSS	I, III, IV
10.30.2017	10	328	Coding open ended responses for themes	I, III
11.3.2017	8	336	finalizing, editing and submitting poster for RWJ research day	IV, VIII
11.3.2017	1	337	cleaning data	I, III

11.4.2017	10	347	Rutgers Pediatric Symposium	VIII
11.14.2017	2	349	Presentation Preparation: award speech	V, VIII
11.16.2017	10	359	RWJ Research Day	VIII
11.16-29.2017	2	361	Emails with committee members regarding final poster dates/times/requirements	VI
11.16-30.2017	8	369	Journal Submissions regarding DNP experience	III, IV
11.16-12.4.2017	4	373	formatting tables, APA format	IV
11.16-12.14.2017	20	393	Write up of results, discussion	IV, VII, VIII
11.17.2017	3	396	MS continuing education online activity	VIII
11.22-25.2017	3	399	Meeting with cardiologist discussing preventative care program initiative	V
12.01.2017	2	401	Emailing and meeting with committee team discussing final presentation	VI
12.08.2017	8	409	DEA course for NP & pre work	VIII
12.12.2017	6	415	CITI training renewal/HIPPA course	I-VIII
12.12-20.2017	12	427	Paper Edits/Revisions	III
12.20.2017	6	433	Re-Structuring Tables/ Editing paper appendices	I-III
12.27.2017	10	443	Creating final powerpoint/working on final presentation	I-III
01.06.2018	6	449	Final presentation edits, modifications, formatting tables for powerpoint	I-IV
01.10.2018	2	451	Meeting with co-chair regarding final presentation	VI
01.11.2018	1	452	emails with committee team setting up time/location for final presentation	VI
01.15.2018	6	458	practice run through and rehersal of final presentation	VII
01.15.2018	6	464	Final presentation print outs, gather of materials, printing at staples, putting together presentation packets	I-VIII
01.19.2018	3	467	final presentation, meeting prior and de-brief	I-VIII
01.20-31.2018	8	475	gathering and organizing of all materials for final DNP manuscript	VII
02.01.2018	2	477	Meeting with 5Tower nurses regarding results from study	III-VII
02.02.2018	6	483	Poster preparation for ENRS conference	V, VIII
02.04.2018	2	485	Meeting with head nurse and nurse director regarding results	V-VI
02.10.2018	6	491	Final binding and printing of DNP manuscript, obtaining final signatures	I-VIII
02.27.2018	4	495	DNP final presentation attendance	I-VIII
04.12.2018	8	503	ENRS conference, presenting DNP project	III-VII
TOTAL	503			

2017 12TH ANNUAL NURSING RESEARCH POSTER WINNERS

Exemplary Professional Practice:

Implementation of Infant Driven Feedings in a Neonatal Intensive Care Unit

Marybeth Gartland, MSN, CCRN
Lauren Byron, MSN, RNC-NIC
Monmouth Medical Center

New Knowledge, Innovations & Improvements:

7 day ZAP and SEAL with AQUACEL Keeps Postoperative Surgical Mediastinitis Away

Gregoria Hernandez RN BSN, CCRN
Angelie DelRosario RN, BSN-RNC
Shiela Hernandez, RN, BSN-PCCN
MaryAnn Aduna, RN, BSN
RWJ New Brunswick

Structural Empowerment:

The CMC emergency departments "journey to Zero": How to eliminate blood culture contamination.

Nicole Powasnick MSN RN CEN
Kathleen Nye MSN RN CEN
Megan Martinson BSN RN CEN
Community Medical Center

Transformational Leadership

Standardizing Smoking Cessation Intervention for Patients in an Acute Care Setting

Michelle Bentsen-Santoro, BSN, RN, PCCN
Irina Benenson DNP, FNP-C, CEN
RWJ New Brunswick