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Smoking Cessation: A Nurse-Led Approach to Address Gaps in Patient Care

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by

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Abstract

Currently, the rate of smoking in the US is 13.7%. While this value represents the lowest rate of smoking in documented US history, cigarette smoking remains the leading cause of preventable death, disease, and morbidity. Healthy People 2030 has set a goal to reduce the rate of smoking to 5%. Though many patients report wanting to quit smoking, nearly half report they did not receive advice from a healthcare professional to do so. Many recommended smoking cessation tools and resources remain underutilized by both clinicians and patients. To help mitigate this issue, this project sought to develop a nurse-led smoking cessation intervention protocol to be used in an acute care setting for adult patients. Through the implementation of this intervention, the project aims to reduce the rate of smoking among adults within the community and to increase healthcare efforts to improve smoking cessation patient care. To evaluate the project's efficacy, baseline and post-implementation patient and facility data will be compared to identify statistical significance.

Keywords: smoking cessation, acute care, nursing

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CHAPTER I

Introduction

Throughout contemporary American history, the use of tobacco, namely cigarette smoking, has remained a staple of our nation's collective identity. In 1963 tobacco use reached a record high with 523 billion cigarettes smoked that year (The New York Times Archives, 1964). Approximately 40% of the nation smoked regularly. While evidence was mounting that demonstrated the negative health effects of tobacco use, it wasn't until the 1964 Surgeon General Report that the rates of tobacco use began to change (Office of the Surgeon General, 2014). At present, approximately 13.7% of adults smoke, and while this value represents a historic all-time low; sadly, nearly half a million people continue to die each year from a smoking-related disease. Further, cigarette smoking continues to be the leading cause of preventable death, disease, and morbidity in the United States. As much as 70% of smokers report wanting to quit and over half will make the attempt (Centers for Disease Control and Prevention, CDC Newsroom, 2019). Unfortunately, slightly more than 40% of smokers acknowledge they did not receive any advice to quit smoking during a visit with a healthcare professional. Despite ample evidence and resources, fewer than one-third of smokers will utilize a Food and Drug Administration (FDA) approved smoking cessation tool such as counseling and medications when attempting to quit (Centers for Disease Control and Prevention, Smoking & Tobacco Use, 2021). The United States has made remarkable success in addressing tobacco use and in mitigating its negative effects, but it remains imperative that the fight for smoking cessation continues. Healthy People 2030 has retained the previous Healthy People 2020 goal to "Reduce current cigarette smoking in adults" and has set an ambitious and

necessary goal to decrease the smoking rate of adults to 5% (Office of Disease Prevention and Health Promotion, 2021). If the United States is to witness success in meeting this goal, it will be important for healthcare providers to become ever more engaged in this effort. Currently, clinicians are underutilizing smoking cessation tools and education. With an improvement in comprehensive training, education, and patient approach, healthcare professionals can greatly impact smoking cessation in the United States.

Problem Statement

Cigarette smoking leads to preventable death, disease, and disability in the United States. Healthcare professionals are not practicing to the full extent of their ability to address and mitigate this issue. A comprehensive approach to improving the healthcare provider's smoking cessation education and patient follow-through is needed to address this gap in care.

Significance

The US Department of Health and Human Service's Agency for Healthcare Research and Quality recommends using the "5 A's" assessment tool to aid smoking cessation. The tool is defined as: Ask, Advise, Assess, Assist, and Arrange. The tool is simple to use, and the agency delineates recommendations for clinician and healthcare system implementation (Agency for Healthcare Research and Quality, 2012). Unfortunately, while this tool is supported by more than 8,700 studies demonstrating clinical efficacy, it remains underutilized. In a study of acute care nurses, only 26% reported above average or high confidence in using the "5 A's", and 50% reported average confidence. Additionally, nurses working for organizations with standing orders for smoking cessation were nearly five times more likely to report high confidence in "5

A's" use. Of reporting nurses, 7% indicated low or no intention of integrating smoking cessation interventions. Broadly speaking, nurses holding higher degrees, certifications, and/or working in management or educational positions were more likely to highly value intervention integration. Results of this study indicate a need to improve smoking cessation education among acute care nurses (Heath et al., 2017).

In a small study of healthcare providers and patients with head/neck cancers, half of the cancer survivors could not remember receiving smoking cessation counseling from their healthcare provider. More than 80% of oncologists reported counseling their patients at the initial consultation, but just over 40% continued to regularly follow up with their patients smoking cessation status. Greater than 70% reported a lack of formal smoking cessation training and a lack of time for assessment; their suggestion was to designate an individual whose primary responsibility is to address patient smoking cessation (Khodadadi et al., 2021). It may be unknown to the participants of this study that their recommendation is actually a formal clinical recommendation made by the Agency for Healthcare Research and Quality's "5 A's" assessment tool (Agency for Healthcare Research and Quality, 2012). The disparities noted in this study, and the seemingly uninformed proposals of participants suggest the need for educational improvement.

In the midst of the present Covid-19 pandemic, smoking cessation continues to be vitally important for the patient and public health. In an American Medical Association interview, Dr. Michael Fiore reported that in over 20 studies investigating the association between smoking and complications of Covid-19 infections greater than 80% of study results indicated adverse outcomes were significantly increased in these patients (Berg,

2020). It therefore, remains critically important to improving smoking cessation efforts among healthcare professionals.

Purpose

The purpose of this project is to develop a smoking cessation protocol for use by acute care nurses. This protocol will include smoking cessation interventions for adult patients that nurses can implement upon admission into the inpatient setting. As noted above, smoking cessation efforts are important to continue pursuing in healthcare as outcomes are not presently at goal. Further, many healthcare professionals are not functioning at their full educational capacity to mitigate this issue. The development and use of this protocol intend to improve the education, training, and ability of nurses to positively impact patients' smoking cessation outcomes.

Theoretical Framework

Meleis' Transitions Theory is the guiding theoretical framework for this project. Transitions Theory describes the experience of transitioning from a given situation or position to another one. Because smoking cessation represents a significant lifestyle change, the Transitions Theory is appropriate to support the journey a patient takes in addressing tobacco dependency. An individual begins their journey just before or concurrent with a change event or trigger. In the context of this project, patients may identify a need to quit smoking because of a triggering event such as hospitalization for chronic obstructive pulmonary disease (COPD), a new supplemental oxygen requirement, or a new diagnosis of peripheral arterial disease (PAD). The change event represents a turning point prompting a life transition. The transition occurs over a given time span, is characterized as a process, and may leave an individual feeling disconnected. As smoking

patients identify the need to quit, they may begin to feel a loss of security and comfort as they realize they are embarking on an unfamiliar journey. As the patient works through this process, they begin developing a greater sense of awareness, becoming aware of the negative health effects of smoking, the financial burden, craving triggers, and the perception of tobacco dependency. Within the journey, the patient may note critical milestones. This may be reaching a certain number of smoke-free days, weaning off supplemental oxygen, or no longer requiring nicotine replacement patches. A patient's transition experience occurs in the context of certain conditions including financial income, health insurance, community role models, family dynamics, marginalization, and other pre-existing health concerns (Meleis, 2020).

An individual's response to their transition experience is guided by several factors. How engaged an individual is in recovery may demonstrate different degrees of success. The degree of engagement that is present in healthcare providers will impact a patient's success, as well. A patient's relationship with healthcare professionals will also impact the journey with how likely a patient is to reach out for support is an important determinant. There are many resources available to aid in smoking cessation, and while improving a patient's awareness of these tools is necessary, it will only be as effective as the patient is capable and willing to access them. Confidence in their ability to succeed and compliance with their response plan play important parts in the transition journey as well (Meleis, 2020).

Successful outcomes are measured by several factors. Primarily is the mastery of smoking cessation, particularly when the patient feels a sense of relief from the experience of transition, the patient feels a greater sense of stability in their new position

as a non-smoker. Further, the patient will adopt an integrative identity wherein they recognize themselves as working on smoking cessation but also view themselves as individuals with other identities, as well as being someone who loves trying new recipes, enjoys fishing, or playing card games with friends. Success can also be measured by a patient's ability to make new connections that are supportive of the journey such as developing new relationships that prioritize a tobacco-free life. Patients will also be able to utilize helpful resources such as telephone quitlines, smoking cessation counseling services, and prescription medications. Ultimately, the most definitive measure of a successful outcome is the patient's perception of well-being. At the completion of their transition, the patient should feel a greater sense of wellness (Meleis, 2020).

Definition of Terms

Within the context of this project, smoking cessation will be defined as abstaining from smoking tobacco including tobacco cigarettes and vaping. The terms used are: healthcare professionals, providers or clinicians will broadly refer to nurses, physicians, nursing assistants, respiratory therapists, case managers, educators, clinical managers, and any other healthcare trained, licensed, or certified individual.

Summary

In summary, efforts made by healthcare professionals to adequately address smoking cessation remains subpar. An initial review of the literature and related resources demonstrates a need for a greater understanding and implementation of smoking cessation tools among healthcare professionals. To decrease the smoking rate from 13.7% to the Healthy People 2030 goal of 5%, it will be important to make changes to current clinical practices. Through the guidance of Meleis' Transitions Theory and

current scientific evidence, this project intends to create an intervention-based smoking cessation protocol for nurses to use in patient care.

CHAPTER II

Literature Review

Presently, in the United States, approximately 13.7% of adults smoke tobacco. Cigarette smoking remains the leading cause of preventable disease, death, and disability among adults in the US. Seventy percent of smokers endorse a desire to quit, however, 40% of individuals acknowledge they received no advice from healthcare professionals to quit during prior health visits (Centers for Disease Control and Prevention, 2019, 2021). Healthy People 2030 has set a goal to reduce the current rate of smoking to 5% by 2030; the US has 8 years to achieve an 8.7% reduction if this goal is to be accomplished (Office of Disease Prevention and Health Promotion, 2021). An initial review of available literature and resources demonstrates suboptimal performance from healthcare professionals in contributing to the realization of this goal. To aid in remedying this issue, the purpose of this project is to develop a nurse-led smoking cessation protocol to be used in an acute care setting for the adult patient population.

A literature review of available evidence was gathered to further guide the creation of this protocol; those findings are discussed in the following sections. A search of the Cumulative Index to Nursing and Allied Health Literature (CINAHL), the Journal of the American Medical Association (JAMA), PubMed, and the Cochrane Library was undertaken. Search results were limited to peer-reviewed research articles pertaining to an adult population in the United States between 2012-2022. Keywords included: Smoking cessation/smoking cessation interventions/quit smoking/stop smoking, nursing interventions, healthcare quality improvement, 5 A's of smoking cessation, teachable moments, nurse attitudes/perceptions/opinions/views, nursing impact, acute care/acute

care setting/inpatient/hospital, and Meleis' Transition Theory. Boolean operators were used to generate the most applicable search results.

Review of Smoking Cessation Interventions

Larzelere and Williams (2012) identified potential healthcare measures and interventions to improve clinical smoking cessation efforts. Clinicians and patients may benefit from the use of assessment tools such as the 5 A's Framework for Smoking Cessation and the 5 R's Strategy for Motivating Patients to Quit Smoking. The 5 A's tool is defined as: Ask, advise, assess, assist, and arrange wherein a patient is asked about their smoking status, their readiness to quit is assessed, patients endorsing a desire to stop smoking are assisted with interventions, and follow-up arrangements are made to provide continuing support. For individuals declining interest in smoking cessation, the 5 R's tool (relevance, risks, rewards, roadblocks, repeat) can be employed. These individuals are asked to identify the personal relevance of smoking cessation, are educated regarding tobacco risks, encouraged to describe personal rewards in quitting, barriers or roadblocks to success are identified, and with each healthcare encounter thereafter the patient is reassessed (Larzelere and Williams, 2012). Some clinicians employ a newer, abbreviated three-step version of the 5 A's: Ask, advise, assist/refer/connect. Using this model, patients are asked about their smoking status, but rather than being assessed for readiness to quit, healthcare providers automatically offer pharmacological and/or behavioral assistance (Rigotti et al., 2022).

When offering behavioral interventions, motivational conversation with patients has been shown to be of greater benefit than a confrontational approach. A considerable evidence base has shown that brief counseling provided by physicians or nurses has

demonstrated greater smoking cessation success than usual care or no intervention. Behavioral therapies including telephone-based quit lines, text messaging, financial motives, individual and group counseling, and receipt of printed cessation materials have all been shown to positively impact smoking cessation success (Rigotti et al., 2022). Complimentary interventions including acupuncture, exercise, hypnotherapy, and website-based interventions have not shown significant benefits. (Larzelere and Williams, 2012).

Pharmacological interventions have been shown to be of help in promoting smoking cessation, as well. Varenicline, nicotine replacement therapies (NRTs), and bupropion have all been shown to increase cessation success. Varenicline has shown the greatest success, with bupropion and NRTs having demonstrated comparable outcomes. When NRTs are used in combination with each other, they show similar success rates as when varenicline is used alone. Combination NRT includes a nicotine patch plus either lozenges, gum, inhaler, or nasal spray to be used for craving control. First-line treatment includes either varenicline or combination NRTs, and second-line treatment can include a singular NRT or bupropion (Rigotti et al., 2022). Some clinicians may choose second-line therapies such as clonidine and nortriptyline instead as they have also demonstrated effectiveness (Larzelere and Williams, 2012). While potentially helpful, clonidine and nortriptyline are not US Food and Drug Administration (FDA) approved as smoking cessation aids and are not typically recommended as second-line therapies. Cytisine has demonstrated effectiveness similar to varenicline, however, it is not currently an FDA-approved drug. For patients not ready to make a full commitment to smoking cessation,

starting varenicline or NRTs prior to a quit date has shown beneficial in increasing cessation rates (Rigotti et al., 2022).

Rice et al. (2017) questioned whether nursing interventions for smoking cessation helped patients quit smoking and if so, to what extent the intervention was helpful. As noted in the study introduction, nurses represent the largest segment of healthcare professionals in the world and therefore have the largest potential to positively impact smoking cessation outcomes. Rice et al. (2017) sought to review previously conducted studies to determine how effective nursing interventions are in aiding adult patients, identified in any healthcare setting, to abstain from smoking. Trial inclusion criteria limited nursing interventions to advice, counseling, smoking cessation handout materials, and follow-up. Rice et al. (2017) then classified these interventions as low-intensity (less than 10 minutes, with/without leaflet handout, and one follow-up) or high-intensity (greater than 10 minutes, additional materials other than leaflet handouts, and multiple follow-ups). The interventions were compared to typical care or no-intervention practices; trials had to include follow-up through at least 6 months. Smoking abstinence was the primary outcome of concern in the studies. Of the trials, 58 met the inclusion criteria, sample sizes ranged from 25-2700, and trial results were published between 1987-2017 (Rice et al., 2017). Rice et al. (2017) searched the Cochrane Tobacco Addiction Review Group Specialized Register and CINAHL for trials. Grading of Recommendations Assessment, Development, and Evaluation (GRADE) was used to determine the quality of the evidence quality. All studies exhibited moderate quality. The results of the study reviews demonstrated nursing interventions had a modestly positive effect on smoking cessation when compared to usual care; differences in the effects

between low-intensity and high-intensity interventions were minimal and more specifically influenced by differences in intervention type. Limitations of this review include the potential for inherent bias in the authors' search for relevant studies, as well as limitations in the quality of the studies reviewed (Rice et al., 2017). Strengths of this review include a large sample size as 58 trials were reviewed representing over 20,000 patients. Additionally, a vast time frame of 20 years, from 1987-2017 was included to generate the most comprehensive results on this topic (Rice et al., 2017).

Review of Implemented Smoking Cessation Interventions

A study surveying 164 inpatient nurses working in Veterans Affairs (VA) hospitals was developed to assess barriers and mediators for the implementation of the 5 A's cessation tool (ask, advise, assess, assist, arrange) in hospitalized veterans (Katz et al., 2016). Nurses were instructed to complete a preintervention survey gathering information regarding the "pros" and "cons" of implementing smoking cessation interventions. Thereafter, Katz et al. (2016) provided education to the nurses in the use and initiation of the 5 A's model. The intervention included access to printed educational materials for patients, integration of the 5 A's model into the electronic health record (EHR), organizational support, and instructions to fax patient referrals to a state tobacco quit line (Katz et al., 2016). Following the intervention, the nurses took a post-intervention survey where 33 of the nurses were selected to participate in semi-structured interviews to further extricate understanding of nurses' relationship with smoking cessation interventions (Katz et al., 2016). The results demonstrated insufficient skill in the use of the 5 A's as a primary barrier (Katz et al., 2016). Clinical time/resource constraints, lack of nursing priority, frustration with the quit line referral process, and

nurses' perceived lack of helpfulness in positively impacting smoking cessation were noted as barriers also by Katz et al. (2016). Some of the nurses expressed skepticism over the efficacy of smoking cessation interventions, as well. Nurses identified the integration of the 5 A's into the (EHR) as a mediator. Additionally, nurses noted the availability of nicotine replacement therapies (NRTs) and printed educational materials to be helpful. Strengths of this study included selecting a setting with a high proportion of patients who were smokers and were admitted with a smoking-related condition, as well as, identifying a need to improve nurses' knowledge base and self-efficacy, and investing in high-quality, dedicated training in smoking cessation interventions (Katz et al., 2016). Limitations of the study included not being able to fully integrate the quit line referral into the nurses' workflow, small sample size and limited setting of four VA hospitals, and lack of interviews with facility leaders and stakeholders (Katz et al., 2016).

Sarna et al. (2013) published a white paper on behalf of the American Academy of Nursing's Health Behavior Expert Panel reviewing available evidence of "nurse-led scholarship in tobacco control". Sarna et al. (2013) reviewed the results of nurse-led research as well as meta-analyses. Regarding studies pertaining to nursing interventions in tobacco cessation, Sarna et al. (2013) reviewed 31 studies ranging from 1983-2007 that compared a nursing intervention for smoking cessation to no intervention or usual care. Sarna et al. (2013) noted that in ¾ of the studies, nurse-led or nurse-involved interventions in hospitalized patients were effective in encouraging smoking cessation at 6 months or longer. No significant differences were noted between minimal (brief advice/one follow-up) and more intensive interventions. While acknowledging nursing interventions to be effective, Sarna et al. (2013) explained that they, unfortunately,

remain underutilized in practice. Areas identified for improvement included improving nursing education regarding smoking cessation and tobacco control, decreasing rates of smoking among nurses, and increasing nursing research on the topic (Sarna et al., 2013).

Singer et al. (2019) began a facility-based Quality Improvement (QI) project to increase resident physicians' assessment of patients' readiness to quit smoking. After identifying insufficient efforts to assess radiation oncology patients' desire to quit smoking, the institution set a goal to increase assessment from the pre-study rate of 4% to 50% or greater (Singer et al., 2019). Thirteen radiation oncology residents participated in the initiation along with 118 patients (Singer et al., 2019). The initiative used a plan-do-study-act (PDSA) approach with three PDSA cycles addressing barriers to tobacco cessation practices, targeting those barriers with intervention-education and development of smoking cessation resources (Singer et al., 2019). The study conclusions demonstrated an increase in the assessment of readiness to quit from 4% to 67% over the course of a year (Singer et al., 2019). Of the patients assessed, 43% expressed a desire to quit (Singer et al., 2019). The study results indicate a need to improve the healthcare approach to smoking cessation efforts and support the efficacy of doing so. Limitations of this study include a small patient sample size, lack of experience as the study primarily incorporated resident physicians, and use of financial incentives to encourage physician participation (Singer et al., 2019).

Okoli et al. (2020) questioned to what extent mental health providers' (MHPs) opinions, abilities, and perceived barriers and needs affected their delivery of smoking cessation treatments to people with mental illness. In acknowledging mentally ill individuals smoke at a rate twice that of the general public and consume almost half of all

the cigarettes sold in the country, Okoli et al. (2020) considered what measures are being taken in healthcare to assess and treat this group. In an inpatient psychiatric facility in central Kentucky, Okoli et al. (2020) collected a convenience sample of 270 MHPs ranging in disciplines from medicine and nursing to pharmacy and indirect facility staff. A 15–20-minute, 4-point Likert scale survey was administered to assess opinions regarding the appropriateness, feasibility, and desirability of the 5 A's tool, MHP's self-efficacy in implementing smoking cessation interventions, barriers to delivery, and perceived training needs (Okoli et al., 2020). The study concluded that most participants had moderate opinions regarding smoking cessation using the 5 A's tool and self-efficacy (Okoli et al., 2020). They expressed a need for greater resources to utilize with patients and while many believed smoking cessation efforts in this population were appropriate, they were less inclined to be them to be effective (Okoli et al., 2020). Providers with less work experience displayed greater enthusiasm overall in their survey responses. Provider bias was noted as a concern as some providers considered patients to be "unwilling" or "disinterested" in pursuing smoking cessation. Like other studies, participants expressed a need for specific smoking cessation training and greater access to patient resources. Limitations of this study included: uneven representation of healthcare disciplines, concern regarding the accuracy of participants' own tobacco use, and the setting taking place in a state with the second-highest tobacco use prevalence in the country (Okoli et al., 2020).

Seth et al. (2020) found inconsistent use of an implemented electronic health record (EHR) best practice alert (BPA) referral for inpatient tobacco treatment consult (TTC). The mixed-methods, sequentially explanatory study evaluated the number of

clinician-accepted BPA trigger orders for TTC, as well as the number of prescriptions for nicotine therapy provided to patients at discharge who expressed to TTC staff interest in cessation (Seth et al., 2020). Quantitative analyses of these results occurred first in the study, followed by qualitative analyses of clinician interviews (Seth et al., 2020). The interviews sought to understand perceived values and barriers to the adoption of the intervention (Seth et al., 2020). Clinicians were comprised of mostly resident physicians. The study was conducted at a large, safety-net hospital in Boston, MA. BPAs "fired" for approximately 6,598 patients (Seth et al., 2020). Clinicians accepted the BPA trigger order for TTC for approximately 62% of hospitalized "current smokers" (Seth et al., 2020). Of those patients, 43% expressed an interest in receiving outpatient nicotine replacement therapy from the TTC staff who completed their consultation (Seth et al., 2020). However, only 48% of the patients received a discharge prescription from their inpatient clinician upon discharge from the facility (Seth et al., 2020). Clinician values included: ease of use of order set, confidence in TTC recommendations, direct communication with the primary team from TTC, and perception of hospitalization as an opportune time to initiate smoking cessation. Barriers included: order fatigue, insufficient provider-TTC communication, perceived lack of patient motivation, perceived lack of acute care priority, time constraints, and competing priorities (Seth et al., 2020). Clinicians suggested implementing automatic referral to TTC, timing BPA triggers to occur after a patient has been assessed by the provider, having nurses alert the provider for order set and/or adding nicotine replacement to an admission order set, and having TTC staff enter intervention orders themselves (Seth et al., 2020). This study was limited

in its application at a single hospital, inherent biases in clinicians and TTC staff, and potential for responses motivated by social norms or expectations (Seth et al., 2020).

In a systematic review by Ugalde et al. (2021), implementation strategies and their successfulness for smoking cessation interventions in a hospital setting were reviewed. Ugalde et al. (2021) noted that the 5 A's model and the abbreviated 3-step model are the most studied cessation tools for assessment and counseling and appear to be the most effective models. Ugalde et al. (2021) identified a failure to provide assistance at discharge and a failure to initiate smoking cessation treatments while hospitalized as barriers to successful outcomes. Further, Ugalde et al. (2021) noted that providing staff with brief education for the implementation of interventions is insufficient. Additionally, acquiring executive support and planning for the evaluation of implemented outcomes is important. The review found that having dedicated smoking cessation staff and having internally and externally linked resources improved outcomes (Ugalde et al., 2021). Implementation strategies identified as potential methods included: thorough education, quality monitoring systems, "practice champions", workflow reminders, revision of clinical roles, and obtaining formal commitments from those involved (Ugalde et al., 2021). Limitations of this review include the inability to gather detailed information from the authors of the individual studies, and a narrative delivery of the findings that may detract from the importance of specific results (Ugalde et al., 2021).

Duangchan et al. (2020) explored the effects of nurse-led smoking cessation interventions in patients with cancer through a systematic review of applicable evidence. Duangchan et al. (2020) found 12 studies meeting their inclusion criteria representing a total of 1,963 cancer patients. The review utilized a design incorporating the PRISMA

(preferred reporting items for systematic reviews and meta-analyses) 27-item checklist to identify appropriate studies (Duangchan et al., 2020). Smoking cessation interventions included face-to-face nurse counseling (average of four 28-minute sessions), educational materials (booklets, DVDs, audiotapes, and printed handouts), follow-up sessions (in-person or telephone), and use of physician-overseen NRTs (Duangchan et al., 2020). Duangchan et al. (2020) reported quit rates in the intervention groups were higher at approximately 43.5%, while control groups were lower at 27.1%. Higher intensity counseling was found to be of greater benefit. Limitations of the review included low methodological quality of the eligible studies, small sample sizes, lack of diversity as most patients were white males, and "self-report" evaluation methods (Duangchan et al., 2020). Overall, the study suggested that nurses are effective and critical in advancing smoking cessation outcomes (Duangchan et al., 2020). However, the author's acknowledged a need for higher quality and larger amounts of nursing research on the topic (Duangchan et al., 2020).

In a study of smoking cessation interventions among patients hospitalized with severe mental illness, Brown et al. (2021) found that a sustained care model improved outcomes in comparison to usual care. In an inpatient psychiatric hospital, 353 patients were assigned to two groups (Brown et al., 2021). In one group, patients received usual care defined as brief receipt of smoking cessation information, nursing advice, provision of self-help handouts, and an offer for NRT (Brown et al., 2021). In the second group, patients received sustained care interventions (SusC) which included: inpatient motivational counseling, free NRT patches at discharge, telephone/text/web-based counseling after discharge, and post-discharge automated voice or text messages (Brown

et al., 2021). Outcomes were biochemically verified at six months post-discharge (Brown et al., 2021). Brown et al. (2021) concluded that the patients receiving the SusC interventions were significantly more likely to have continued with smoking cessation at their 6-month follow-up than the usual care group. Limitations of the study include the single-hospital setting, the potential for differences in approach to motivational counseling, and the lack of differentiation of mental illness diagnoses included in the patient sample (Brown et al., 2021). Strengths included randomization of participants, and the use of biochemical testing to verify study results (Brown et al., 2021).

Hammett et al. (2018) designed a study to evaluate the effectiveness of post-discharge smoking cessation text messaging. In the randomized, controlled trial of 140 patients, participants received automated text messages following hospital discharge throughout the first month (Hammett et al., 2018). Patients in the control group received weekly text message smoking questions, while those in the intervention group received the same questions as well as cessation tips and an option for system interaction for additional support (Hammett et al., 2018). Patients in the intervention group were more likely to have abstained at the 1-month follow up with 44% having abstained compared to 37% in the control group (Hammett et al., 2018). However, greater than 80% of patients in both groups rated the text messages as satisfactory or better, indicated that they would recommend the program to family/friends, and reported having read all the text messages (Hammett et al., 2018). These results suggest the possibility that text messaging, independent of intensity, may be well received by patients and helpful. Limitations of this study include an inability to provide this intervention to patients unfamiliar with text messaging, disproportionate representation as 81% of participants were white, and

participant refusal to take biochemical testing to evaluate abstinence as 10 patients refused to do so (Hammett et al., 2018). Strengths of the study included randomization, use of biochemical verification as study results utilizing self-report are subject to inaccuracy, and the possibility that patients who are "heavy" texters may respond more favorably to this style of intervention (Hammett et al., 2018).

To evaluate intervention options for patients not yet ready to quit smoking, Houston et al. (2022) questioned whether offering patients a skills-building gaming-based intervention in addition to NRT sampling options would be more effective at promoting cessation than NRT sampling alone. The 3-week gaming intervention called "Take a Break" was comprised of five aspects: motivational messaging, mobile health apps for treatment of cravings, abstinence goal setting, challenge quizzes, and reward points for participation (Houston et al., 2022). Of the participants, 433 were randomly assigned to the intervention and control groups across four health care systems (Houston et al., 2022). Houston et al. (2022) sought to measure how long it took patients to initiate the first quit attempt and how many continued with cessation at 6-month follow-ups. Using carbon-monoxide testing, Houston et al. (2022) noted that the length of time to first quit attempt was shorter in the intervention group. At six months, 18% of gaming participants had continued cessation, compared with 10% in the NRT sampling-only group (Houston et al., 2022). Limitations of the study include possibly limited access to the game design for use in study replication and a 3-week intervention limit (Houston et al., 2022). Strengths of the study include randomization of participants, multisite setting, and use of biochemically verified cessation results (Houston et al., 2022).

Application of Meleis' Transitions Theory

In the pursuit of developing a transitions theory, Meleis et al. (2000) explored five studies that sought to examine the process of transition as it could be applied to theory development. Meleis et al. (2000) analyzed the studies intending to extract information to refine the understanding of transition as a core concept of nursing theory. Meleis et al. (2000) related the connection between vulnerability in life experiences and transitions. The five studies focused on vulnerable populations and situations that were notably more delicate than those of everyday life. The studies pertained to the transition of African American women into motherhood, a sense of neglect of the menopausal change in low-income Korean immigrants, the adaptation of parents to the diagnosis of a congenital heart defect in their child, the transitional effects of migration, and the acquisition of new caregiver roles for families of patients receiving chemotherapy (Meleis et al., 2000). From the analysis of these studies, Meleis et al. (2000) identified six components relating to a transition theory: types and patterns of transition, properties of transition, conditions, process indicators, outcome indicators, and implications for nursing practice. Properties identified included: awareness, engagement, change, time span, and critical points (Meleis et al., 2000).

Meleis et al. (2000) proposed that transitions can be situational, organizational, or relational to health, development, or illness; they can be complex and overlapping. Many transitions can occur at once and can be interrelated and/or interdependent. As such, nursing interventions should take into consideration the type and pattern of transitions, whether single or multiple transitions are happening and whether they are sequential, simultaneous, or intersecting in particular ways.

The conditions of a transition can be affected by an individual's understanding and perceived meaning of the transition, how their culture or belief system impacts that understanding, and how social and financial function play into the transition, as well. A person's preparedness and knowledge base affect the conditions. Meleis et al. (2000) noted as an example, the transitional effects of migration for Brazilian women in one of the reviewed studies. The transition that occurred in their migration was affected by their lack of knowledge regarding geography, language, and culture upon coming to the US (Meleis et al., 2000).

Process indicators can be seen in connection, defining location within the transition, coping, and developing greater confidence in the journey. The Brazilian women distinguished their location in the experience by discussing the differences between their pre- and post-migration lives (Meleis et al., 2000). Some aspects of their former lives were deemed preferrable, while other aspects were seen as having been improved by the move (Meleis et al., 2000).

Outcome indicators can be seen in the mastery of new skills or skill sets and the creation of a new identity that is fluid and integrated. As the Brazilian women progressed in their experience of migration, their vantage points reflected both the culture of Brazil, but also included their newly acquired American culture (Meleis et al., 2000). The identity of the women became less concrete as they adapted to a new definition of themselves (Meleis et al., 2000).

Awareness as a property of transition could be seen in the Korean women's experience of menopause (Meleis et al., 2000). Some women understood that menopause was a process of development that would include multiple events, while other women

only understood it as the end of menstruation (Meleis et al., 2000). Change is inherent in transition, with differences being noted in how the experience and worldviews are altered as a result (Meleis et al., 2000). Transitions occur over a given time span. The ending may be specific, or it may result in a sense of stability, though the transition may be enduring as with the example of migration. Though the Brazilian women became more settled into their new lives, their transition continued as new challenges persisted (Meleis et al., 2000).

Critical points in transition were typically noted as more specific events that were significant in heightened awareness or evolving perception of differences. In the study of transitioning family roles in patients undergoing chemotherapy, Meleis et al. (2000) noted four critical points: The initial diagnosis, the experience of side effects of the treatment, the intersections of changes in a treatment plan, and the completion of chemotherapy. Each of these events was significant in causing an abruption to the caregivers' understanding of the transition. Each event brought new awareness and understanding of the changes they and their family member was experiencing.

Summary

Following a review of the above studies, several pieces of information were able to be synthesized. Regarding smoking cessation assessment tools, the 5 A's, 5 R's and 3-step models appear to be the most studied and perhaps most utilized formal tools. Smoking cessation treatment interventions can be categorized as pharmacological or behavioral. Varenicline and combination NRTs are first-line treatments, with single NRT and bupropion noted as second-line treatment options. Behavioral treatments may include motivational counseling, brief or intensive counseling, telephone/text/voice messaging,

printed education, and direct advice. Brief counseling appears to be just as effective as more intensive counseling. The nursing intervention was demonstrated to have a positive impact on patients' smoking cessation success.

When considering the implementation of a tobacco treatment program, the following have been shown to be encountered difficulties: Clinicians' lack of training and insufficient skill in 5 A's use, as well as utilization of a 3-step model. Clinicians often cited a lack of time and resources as inhibitors. Many providers often viewed the interventions as ineffective, not an acute care priority, and possibly a waste of time as some providers did not perceive patients as being motivated to quit smoking. Additionally, some clinicians noted frustration and order fatigue with the implementation of a new treatment program.

Mediators to success were found in the use of financial incentives to adopt a new practice, integration of the treatment protocol into the EHR, and ease of availability of NRTs. Clinicians reported the use of printed educational materials as helpful and noted that hospitalization may be an opportune time to begin smoking cessation treatments. Providers valued direct communication between primary care teams and smoking cessation treatment team members, with some suggesting that nurses or other designated "practice champions" would be helpful to aid in overseeing the treatment plan.

The studies generated ideas and areas for discussion. Beginning a trial of a protocol in a smaller setting before moving to a larger scale may be helpful to identify strengths and weaknesses before engaging in a cumbersome trial. Brief education for healthcare providers is not likely to be helpful. More intensive education would probably be required. For the implementation of interventions into the EHR, the timing of order set

triggers is critical for adoption, workflow reminders may be needed, and automatic referrals for follow-up could be helpful in easing the workload for providers. Follow-up for post-discharge patients could occur through personal communication or automated voice and/or text messages. For individuals not ready to quit, employing skills-building interventions could be useful for motivation.

In reviewing the considerations and application of Meleis' Transition theory to various studies, it became evident that transition is often tied to a state of vulnerability. For patients attempting to quit smoking, the fear of the unknown and the uncertainty of what lies ahead may be daunting and may require compassion and encouragement. As patients move forward in their attempts, nurses need to be mindful of the individual's changing awareness, the presence of critical points, the arrival of new skills, and the development of a new, integrated identity. With change being inherent in transition, nurses may have to adapt to the variability that the journey of smoking cessation brings.

Overall, the evidence suggests many options for successful interventions. While each method may have limitations and drawbacks, there has likewise been a lot of information generated regarding what works well, what does not work, and what could be made potentially better. As the project moves forward to develop a nurse-led smoking cessation intervention for hospitalized adult patients, the information gathered from these studies will prove useful for guidance.

CHAPTER III

Needs Assessment

To aid in accomplishing the Healthy People 2030 goal to reduce the rate of smoking to 5%, healthcare professionals will need to improve current clinical practices. As providers often fall short in providing optimized smoking cessation care, this project intends to develop a protocol that may alleviate the problem (Office of Disease Prevention and Health Promotion, 2021). This protocol will be nurse-led and carried out in the acute care inpatient hospital setting, focusing on the adult patient population. To determine how to best develop this protocol, an assessment of needs is required. In the following sections, needs, strengths, barriers, and available resources are discussed.

Setting

The implementation of the protocol will occur in acute care, inpatient, or hospital setting. The hospital selected for implementation is in the Southeastern United States. This facility has an approximately 800-bed capacity. The facility is a teaching hospital and engages in research. The facility is also certified in chest pain and stroke and is a level I trauma center. In addition to acute care services, the facility offers the following services: cancer, heart, hospice, sports medicine services, and more. The facility is a self-funded, political subdivision of the state of location and has served the community there for over a century. The facility has a service area that includes six counties. The facility's identified mission is to "provide excellence in health", while the vision is to "become a national leader in healthcare quality".

Target Population

The nurse-led smoking cessation protocol will target the adult patient population. Among this patient population, men are more likely than women to smoke, with the highest incidence of smokers between the ages of 25-64 years of age (Centers for Disease Control and Prevention, 2022). Though the current national rate of smoking averages approximately 13.7%, the rate of smoking among the adult population in the southeast US ranges from 14-22% (Centers for Disease Control and Prevention [CDC], 2022). Unfortunately, residents in southern states are less likely to quit smoking successfully or to utilize recommended cessation interventions despite having comparable or higher rates of quit attempts (McDowell, 2021).

Educational attainment is noted to be inversely proportionate to smoking rates. The CDC (2022) states higher educational achievement correlates with lower rates of smoking and vice versa. This same inverse proportion was also noted with an annual income (CDC, 2022). Additionally, rates of smoking are noted to be higher among disabled adults, as well as those experiencing symptoms of depression and/or anxiety (CDC, 2022).

Sponsors and Stakeholders

Clinical educators and the facility's corporate education department will serve primarily as project sponsors as these individuals provide education and ensure competency for inpatient nurses. Because project development and implementation will be education intensive, these associates will be most capable of assisting the project leader in identifying available resources, options, and potential barriers. The clinical educators are comprised of nurses who are responsible for providing training and

continuing education within the facility. Directors of Nursing over the facilities inpatient setting will be needed for sponsorship, as well as project approval for implementation.

The Medical Director of Inpatient Medicine is likewise a project sponsor as the project includes the implementation of standing nursing orders as part of the protocol. This individual is a physician who has experience practicing in an inpatient setting. This physician oversees inpatient staff doctors, the provision of acute care, and can advocate for the implementation of this project with other facility leaders including the Chief Medical Officer. Because this project requires collaboration with inpatient physicians and a change to the way medical services are offered, sponsorship and approval by the appropriate medical directors will be required.

Stakeholders include inpatient nurses, nursing unit managers, nursing assistants, pharmacists, case managers and discharge planners, hospitalized adult patients, and the patient's support system. Each of the individuals in these groups will be directly or indirectly affected by the development of this project. Primarily, inpatient, acute care nurses, and hospitalized adult patients identifying as smokers will be the most affected. Pharmacists and the pharmacy department will be indirectly affected as portions of the protocol will require dispensation of medications. Nursing assistants, nurse managers, case managers, discharge planners, and patient support systems will be indirectly affected as each will be needed to ensure compliance and adherence to the protocol.

Desired Outcomes

The desired outcome following the implementation of the project is a reduction in smoking rates among hospitalized adult patients, an increase in the proportion of patients making a quit attempt, and adoption and facilitation of the project by key sponsors and

stakeholders. Obtaining a baseline date prior to implementation at the facility would be helpful to serve as a basis for comparison for the evaluation of project effectiveness. If the project demonstrates efficacy in smoking cessation among hospitalized patients or an increase in quit attempts or willingness to quit, a natural extension of this project may be to evaluate patients, post-discharge. System navigators could follow up with patients at predetermined intervals following hospital discharge to determine what proportion of patients have continued smoking cessation. Extending the project in the future to include this component may glean information regarding how well the project is capable of influencing smoking rates in the adult population of the community at large.

In a broader context and dependent on project efficacy, smoking cessation efforts could be expanded to include designated tobacco navigators that could monitor and ensure protocol compliance, provide counseling, and organize post-discharge support services and follow-up. At present, similar models are being utilized in clinical practice for conditions such as congestive heart failure (CHF). With the development of post-discharge CHF hospital clinics and CHF hospital navigators, many patients living with CHF are receiving more thorough and focused care. It may be possible to extend the project to include the development of a similar approach.

SWOT Analysis

In evaluating the strengths, weaknesses, opportunities, and threats (SWOT) of this project, several considerations were made. The project presents many strengths in that it could be easily implemented into a pre-existing inpatient admission process that bedside nurses currently undertake. As noted previously, the 5 A's and 3 A's intervention models are the most recommended assessment tools. Because the 3 A's represents an abbreviated

approach, implementing this model into the inpatient admission process adds strength to the protocol as it may help reduce pressure on clinical workflow and time management.

Additional strengths include facility policies designating the campus as smoke-free and the current availability of numerous nicotine replacement therapy (NRT) options in the inpatient pharmacy. Further, multiple Cochrane reviews have demonstrated the efficacy of the proposed interventions, training and education could be formatted into an online module, and the protocol is financially sustainable over the long term. Weekly use of NRTs is less expensive than a pack of cigarettes (National Institutes of Health, 2022). Because NRTs have a rapid onset compared to varenicline or bupropion, NRTs are a more suitable pharmacologic intervention (Rigotti, 2022).

Weaknesses presented in the project include a lack of dedicated roles for protocol implementation, difficulty in enforcing protocol use, and a need to organize and schedule training for nurses. Providers may present oppositional biases where some may perceive patients as not being willing to quit smoking or may view efforts as inadequate use of time. The facility is currently understaffed and thus may not be as capable of making larger clinical shifts in practice. Finally, NRT may be contraindicated in some patient populations; there is questionable use in patients experiencing acute coronary syndromes (ACS) (Rigotti, 2022).

Because the facility's mission is to "provide excellence in health", this project has an opportunity to be supported by that mission. This facility was a Magnet-designated hospital at one time but does not hold that credential at present. The implementation of a nurse-driven protocol is supported by the Magnet Model, and the possibility to extend the project into a nursing research opportunity only further supports the values of Magnet

(American Nurses Credentialing Center, 2022). Additionally, the project allows for the opportunity to grow understanding and application of nursing theory through the use of Meleis' Transitions Theory, to reduce hospital readmission, improve patient outcomes, and enhance patient-centered care.

Low morale or acceptance of the protocol presents a potential threat, as does the possibility of Covid restrictions, increasing clinical time constraints, and order and workflow fatigue. Further, the facility is embarking on a new journey to transform the staffing model for inpatient nurses. With this paradigm shift from the primary nursing model to team nursing, the implementation of a new protocol may contribute to overwhelming. Finally, loss of interest in the protocol may be a concern as many smokers require multiple quit attempts before having success.

Table 1

SWOT Analysis

S Strengths	W Weaknesses	O Opportunities	T Threats
Protocol can be added to existing admission process	*NRTs possibly contraindicated*	Capitalize on facility mission	Low morale/acceptance
Smoke-free campus	Oppositional provider biases	Supports potential Magnet designation	Covid restrictions
Availability of NRTs in inpatient pharmacy	Lack of dedicated roles for implementation	Enhance patient-centered care	New staffing models for nursing being undertaken
Multiple Cochrane reviews supporting interventions	Difficult to enforce protocol	Increase understanding and application of nursing theory	Clinical time constraints

S Strengths	W Weaknesses	O Opportunities	T Threats
Cost-efficient, financially sustainable	Facility is currently understaffed	Reduce hospital readmissions	Order/workflow fatigue
Rapid onset of NRTs conducive for use in hospitalized patients	Need to organize/schedule training modules	Improve patient outcomes	Loss of project interest
Protocol training could be provided through online modules			

Resources

To develop and implement this project several resources are already available. At present, an admission flowsheet is integrated into the facility's electronic documentation program. The protocol could be added to this flowsheet with the support of the Information Technology (IT) department. IT will also be needed to add an order set to allow nurses the ability to order smoking cessation treatments per the protocol from a list of standing orders. Currently, the facility maintains nursing competency through the completion of online HealthStream modules with oversight from the corporate education department. The PowerPoint presentation along with educational handouts could be loaded into HealthStream as modules and assigned to each inpatient nurse for completion. To evaluate competency, post-module tests could be created. The corporate education department would be needed to oversee the completion and competency of project modules. Additionally, it would be necessary for inpatient physicians, pharmacists, case managers, nurse managers, nursing assistants, and discharge planning

staff to be educated regarding their specific roles in the development and implementation of the project. The corporate education department in conjunction with the directors of nursing, inpatient medical director, and inpatient director of pharmacy could facilitate this training.

To disseminate initial information regarding the project, a conference room with computer access and a projector would be required to present the PowerPoint. The education department has several conference rooms that can be scheduled for use that can accommodate small group sizes. Additionally, educational handouts and information will be organized into folders for each attendee. The cost for folders, printouts, and staff time for providing and attending the educational sessions will be provided by the facility.

Team Members

The project leader will pair with the facility's inpatient clinical educators to begin implementing project education in a systematic manner. Following approval of the project from the appropriate directors, education modules will be uploaded into HealthStream by the project leader. A post-module test written by the project leader will be used to evaluate competency at module completion.

Global emails will be sent to senior stakeholders such as Directors of Nursing, Medicine, and Pharmacy for them to distribute to their staff as appropriate. The global emails will focus on notification of upcoming project implementation and the need to begin work on completing competency modules. Once the HealthStream modules are uploaded and assigned to employees, deadlines for completion can be set. A team member in inpatient pharmacy and IT will need to be selected to work on developing the computer component of the project and ensuring NRTs are available for order from the

pharmacy. Once these steps are completed, an implementation date can be set. The project leader can arrange Zoom sessions for employees to attend to provide more information and education. The project leader and clinical educators can forward email instructions and educational handouts to consulting physicians and health care providers falling outside of the facility network to ensure project change awareness. As the clinical educators are currently assigned to various areas of the hospital to maintain nursing competency, the same arrangement will be followed to oversee module completion.

Cost-Benefit Analysis

At present, the US spends approximately $225 billion on direct medical care each year to provide services to smoking adults (CDC, 2021). Of these individuals, nearly a quarter are uninsured representing lost revenue (CDC, 2021). Additionally, $156 billion is lost in productivity each year due to smoking-related death (CDC, 2021). The facility selected for project implementation could benefit by witnessing a reduction in medical cost expenditures, lost revenue, and lost productivity.

More specifically, it is noted that the facility has a 30-day mortality rate for pneumonia and heart failure which is currently higher than both the national and state averages. Because tobacco use accounts for the leading cause of disease, death, and disability, and is a known contributor to the development of pneumonia and heart failure, it may be beneficial to the facility to consider potential improvements in smoking cessation care (CDC, 2019).

Costs associated with the development and implementation of the project are primarily associated with development and implementation as a continuation of the

protocol would incur minimal costs. Identified project activities and associated estimated costs are noted in Table 2.

Table 2

Identified Project Activities and Estimated Costs

Project Development and Implementation	Approximate Monetary Cost
Development of Project Protocol	$0
Uploading into HealthStream as modules	4 hours X salary of 1 nurse educator
Create module post-tests	$0
Adapt EPIC and create an order set	40 hours X 1 salary of 1 IT employee
Inventory and order NRTs for pharmacy	8 hours X 1 salary of a pharmacist
Distribute emails to stakeholders; follow-up	40 hours X 1 salary of 1 nurse educator
Zoom meetings	$0
Training Modules	3 hours X hourly pay of inpatient nurses
Oversee module completion/competency	40 hours X salary of all nurse educators

Summary

Through an assessment of needed resources, available options, and potential barriers, it appears currently feasible to proceed with project development and implementation. The nurse-led protocol will primarily affect inpatient nurses and hospitalized adult patients, but the project as a whole will need the support of many sponsors and stakeholders. The project is supported by numerous strengths and poses possibilities to capitalize on many opportunities; weaknesses and threats to the project are present but appear reasonable to mitigate. The facility has both the resources and staff to

support the needs of the project and has the potential to benefit from a cost perspective. While the project begins with the implementation of a nurse-led protocol, it allows for expansion into nursing research and a further smoking cessation program if the facility deems it appropriate.

CHAPTER IV

Project Design

As noted previously, the national and regional rate of smoking continues to be higher than acceptable. The national average is approximately 13.7%, while the regional average ranges from 14-22% (Centers for Disease Control and Prevention [CDC], 2019, 2022). This project aims to reduce these averages in order to aid progress in achieving the Healthy People 2030 goal of reducing the smoking rate to 5% (Office of Disease Prevention and Health Promotion, 2021). The project will achieve this outcome by implementing an acute care nurse-led smoking cessation intervention protocol targeting adult patients from the community.

Goals

This project seeks to accomplish two goals which are:

1. To reduce the rate of smoking among adults within the community.
2. To increase healthcare efforts to improve smoking cessation patient care.

A reduction in the regional rate of smoking will contribute to a reduction in the national rate. A reduced national rate aids progress in achieving the Healthy People 2030 goal to reduce the smoking rate to 5% (Office of Disease Prevention and Health Promotion, 2021).

Additionally, one of the recognized factors impeding the ability to improve rates of smoking has been a subpar response on the part of healthcare professionals (CDC, 2021). The second goal of this project is to improve the smoking cessation care that patients receive. For this project to be successful, goal two must be achieved for goal one

to be achieved. For success to be sustainable over a longer period, healthcare professionals must continue to maintain improved smoking cessation care.

Objectives

To achieve goal one, the following objectives must be met:

1. Within the facility, there will be a statistically significant reduction in the rate of smoking among hospitalized, acute care patients.
2. Upon admission to the facility, there will be a statistically significant reduction in the number of adult patients reporting they smoke.

To achieve goal two, the following objectives must be met:

1. All inpatient nurses will complete the Smoking Cessation Intervention Module and achieve a post-test score of 80% or higher within the initial window of training.
2. All inpatient nurses will correctly utilize the Smoking Cessation Intervention Protocol in the acute care setting with each patient encounter.

Material Development

The project materials developed to achieve these goals and objectives include a PowerPoint module, a smoking cessation intervention protocol, an educational handout, and a post-module test. The PowerPoint module provides information to explain why this project is necessary and includes instructions for using the smoking cessation intervention protocol and the educational handout. Additionally, elements of Meleis' Transitions Theory are interwoven into the module and protocol. The module is to be completed by all inpatient nurses prior to the facility implementation of the project.

Following completion of the module, the nurses will complete the post-module test and are expected to achieve a score of 80% or higher.

The PowerPoint module includes the smoking cessation intervention protocol which employs the 3 A's assessment and counseling tool (Ask, Advise, Assist) and explains how to use the protocol in practice. Upon admission to the facility, each adult patient will be asked about their smoking status. For patients acknowledging they smoke, they will be advised in clear, strong, and personalized language to stop. The nurse is encouraged to consider and identify patient "turning points" that may motivate the patient to quit that can be used to make advice more personalized. The nurse will then assist the patient in quitting by providing nicotine replacement therapy (NRT), an educational handout, and help to access the 1-800-QUIT-NOW smoking quit line. Because any significant life change can be challenging, the module includes instructions to consider how the non-smoking transition may affect patients.

Because combination NRT has been demonstrated to be the most successful pharmacological approach to cessation, the protocol will employ a "patch plus" strategy. Each patient will be prescribed a nicotine patch dependent on the number of cigarettes they smoke each day as well as an order for nicotine lozenges to be used as needed for cravings. Nicotine lozenges were selected for breakthrough treatment as they impose the fewest number of side effects or barriers to use. Because the protocol is nurse-driven, smoking cessation order sets will be created and used allowing nurses to order NRTs without requiring a physician's order. For patients smoking more than 10 cigarettes per day, the nurse will order a 21mg nicotine patch to be worn daily; patients smoking less than 10 cigarettes will receive an order for the 14mg patch. The patient will also be

assessed for how soon in the day they consume their first cigarette. If within the first 30-minutes of waking, the patient will receive an additional order for 4mg nicotine lozenges to be used for breakthrough cravings; if later than 30-minutes, the patient will receive an order for 2mg lozenges.

The educational handout will be provided for each patient in the inpatient admission folder. The handout provides answers to several important questions patients may have. The handouts include why it's important to quit smoking, how patients will benefit from quitting, what the healthcare community is doing to support patients, what to expect when no longer smoking, and how to best be successful. The handout is written for self-education by the patient but should be utilized by the nurse to provide smoking cessation education, as well. The literature review demonstrated brief counseling sessions are often as effective or more so than lengthier sessions. Additionally, research indicated an educational handout was a preferred teaching resource for nurses and was shown to increase patients' opportunities for success.

Finally, the protocol specifies the nurse will assist the patient to access the 1-800-QUIT-NOW quit line for additional support. The patient can register by telephone, text message, or online. Services are available 24 hours a day, 7 days a week, and are free to use. The patient can receive counseling, a mailed educational packet, text messaging services, as well as free NRTs if eligible. Patients are only ineligible for NRTs if they are covered under the patient's existing health plan. Utilizing the quit line helps ensure post-discharge support, cessation follow-through and represents an equitable patient resource as it is a free service that can be accessed through several routes.

At patient discharge, the nurse will ask if the patient has continued to smoke during the hospital stay or if smoking cessation has occurred for the duration. The patient will be encouraged to continue using the protocol interventions and will be provided a prescription for nicotine patches and lozenges to continue using after discharge.

Following completion of the PowerPoint module, nurse competency will be evaluated by a 10-question post-test. Questions are written in multiple-choice and true/false format. Each multiple-choice question has four answer choices with only one correct answer. Competency is determined by the achievement of a final score of 80% or higher. Nurses will be allowed unlimited attempts to review the module and retake the post-test to achieve competency.

Timeline and Plan

The plan for project implementation and evaluation is broken down into five sequential phases. Phases one and two will occur prior to protocol implementation into clinical practice. Actual clinical implementation will occur in phase three; in phase four, ongoing project use and adjustments will occur. And finally, in phase five evaluation of the project will begin.

In phase one, Figure 1, the PowerPoint module and post-test will need to be uploaded into HealthStream to be able to be assigned to nurses to complete. A clinical nurse educator can be assigned this task. The protocol and NRT order sets will have to be built into the facility's documentation system. This facility uses EPIC, therefore an Information Technology (IT) employee will be assigned to oversee completion. One facility pharmacist will be assigned to inventory and order additional NRTs in preparation for an increase in the clinical use of these medications. Finally, emails will be

sent to the facility's Directors of Nursing (DON) and Nursing Managers (NM) to alert them to project development and upcoming implementation. Phase one is projected to be completed within 3 months.

Figure 1

Phase One

Build PowerPoint Module and Post-test into HealthStream	
Build protocol and order sets into EPIC	**Approximately 3 months to complete**
Inventory and order additional NRTs in Pharmacy	
Notify Directors of Nursing (DON) and Nursing Managers (NM) via email of project development.	

Phase two, Figure 2, focuses on dispersing and assigning education to relevant staff in preparation for project implementation. HealthStream modules can now be assigned to inpatient nurses for completion, project and protocol content can be forwarded by email to staff and facility privileged physicians and global emails can be sent out notifying all pertinent staff of assignment deadlines. An official Go Live date for clinical implementation will be set during this phase, as well. Each of these tasks can be completed by a clinical educator. Optional Zoom meetings will be scheduled and available for any staff member to attend to ask questions or seek clarification if needed. The project leader will conduct these meetings. Phase two will require approximately 2 months to complete. Emails and education assignments will occur at the start of the 2

months, giving staff approximately 8 weeks to complete training. A reminder email will be sent out at the 4-week mark.

Figure 2

Phase Two

HealthStream modules are assigned to inpatient nurses	
Project content and protocol information are forwarded via email to staff and facility-privileged physicians	**Approximately 2 months to complete**
Optional Zoom meetings are scheduled for any questions/clarification	
Global emails were sent out to inpatient nurses, DONs, and NMs notifying them of module assignment/deadline and Go Live date.	**To be sent out 2 months, and 4 weeks prior to the deadline**

In phase three, Figure 3, clinical educators will oversee module completion and will issue email reminders to employees who have not yet completed the module by 1 week of the deadline. Following the education deadline, protocol implementation will begin immediately. For employees who do not complete module training by the deadline, disciplinary action may be taken and individual remediation with clinical educators will be scheduled to ensure competency. Phase three will last for approximately 3 months from the time the protocol begins.

Figure 3

Phase Three

Clinical Educators to oversee HealthStream module completion emails sent to individuals who have not completed the module.	**Email reminders are sent out 1 week prior to the deadline**
Go Live	**Approximately 3 months from Go Live**
Disciplinary action for module non-completion and remediation.	

During phase four, Figure 4, the protocol will have been in use for approximately 3 months. At this time, clinical educators will begin random chart reviews to determine how well the protocol is being utilized. For any individuals not compliant with appropriate use, an individual email with remediation education will be sent. Additionally, global emails will be sent at the 3-, 4-, and 5-month marks to reinforce protocol use. Phase four will last for approximately 3 months.

Figure 4

Phase Four

Chart reviews begin to evaluate protocol utilization and documentation	**Months 3-6 following Go Live protocol implementation**
Global email reminders are sent at 3, 4, and 5 months after the post- Go-Live date	
Individual emails and remediation for employees not correctly utilizing the protocol	

Finally, in phase five, Figure 5, data comparison begins. Once the project has been in place for 6 months, clinical educators will begin comparing baseline data to post-implementation data. At 6 months, the number of patients reporting they smoke on admission to the hospital will be compared to the number of patients reporting they smoke at the beginning of the project. This value will be compared again at the 1-year mark. Comparing these values will help determine if the project is having any effect on the rate of smoking among adults coming into the hospital from the community. Additionally, data will be compared regarding the proportion of patients who self-report continued smoking at discharge from the hospital or smoking cessation. This information will help determine how successful the protocol is in supporting smoking cessation within the hospital setting. Data will be collected to evaluate the clinical use of the protocol, as well. Randomized chart review can help determine what proportion of inpatient nurses utilized the protocol and how well the actions were carried out. These

evaluative processes will help determine if the objectives for each goal were met. With the completion of phase five, the project will have occurred for approximately 17 months.

Figure 5

Phase Five

Begin comparing baseline data to post-implementation data	**Comparisons at 6 months and 1 year**

Budget

As noted previously, most project costs are associated with implementation and evaluation. The cost to sustain the project after the initial training and evaluation period will be minimal. In Table 3, project activity estimated costs are identified. Without knowing the exact pay rate, the number of employees, or print and paper costs to the facility, Table 3 represents an estimate. The website, Indeed®, was used to gain a broad idea of approximate wages within the facility's geographic location. Per the site, clinical nurse educators make on average $45.91 an hour, IT Specialists average $15.89 an hour, registered nurses average $39.54 an hour, and pharmacists average $54.32 an hour (Indeed, 2022). Using these values, the project requires an approximate budget of $83,651.00 plus the cost of necessary print and paper.

Table 3

Project Development, Implementation, & Evaluation Activities with Associated Monetary Costs

Project Development, Implementation, & Evaluation	Approximate Monetary Cost
Development of Project Protocol	$0
Use of one conference room with projector	$0
Training for Clinical Educators	24 hours x salary of all nurse educators ($45.91 x 24 hours x 10~$11,000.00)
Cost of folders and educational printouts for nurse educators	Unknown
Uploading into HealthStream as modules	4 hours x salary of 1 nurse educator ($45.91 x 4 hours x 1~$184.00)
Adapt EPIC and create order set	40 hours x 1 salary of 1 IT employee ($15.89 x 40 hours x 1~$636.00)
Inventory and order NRTs for pharmacy	8 hours X 1 salary of pharmacist ($54.32 x 8 hours x 1~$435.00)
Distribute emails to stakeholders; follow-up	40 hours X 1 salary of 1 nurse educator ($45.91 x 40 hours x 1~$1836.00)
Zoom meetings	$0

Evaluation Plan

As noted above, the project has two goals to reduce the rate of smoking among adults within the community and to increase healthcare efforts to improve smoking cessation patient care. The first goal has two objectives: to produce a statistically significant reduction in the rate of smoking among hospitalized patients and in the number of adult patients reporting they smoke on admission to the facility. In phase five at 6 months and 1 year after the project has been implemented, nurse educators will begin comparing baseline and project data. As part of the protocol, on admission to the hospital, each patient will be asked if they smoke. To know if the project is having any effect on the community, the proportion of patients self-reporting they smoke on admission should decrease after project implementation. Additionally, upon discharge from the hospital, each patient will be asked if smoking has continued or if smoking cessation has occurred. As the project continues, the number of patients self-reporting smoking cessation during the hospital stay is expected to increase.

To evaluate the second goal, two objectives were developed. All inpatient nurses must complete the smoking cessation intervention module and earn a post-test score of 80% or higher, and all inpatient nurses will correctly utilize the protocol in practice with each patient encounter. In phase three, nurse educators will begin overseeing module completion and recommending disciplinary action and remediation for any nurses that have not yet completed module training. At this time, data can be collected to determine if all inpatient nurses have completed the required training and earned a score of 80% or greater.

In phase four, random chart reviews to determine the appropriate utilization of the protocol will begin. Over the course of months 3, 4, and 5, non-compliant employees will be contacted by email for remediation. In phase five, as data comparison takes place, randomized chart reviews will help determine to what extent the protocol is being used correctly.

Summary

The goals of this project include decreasing the community and hospital rates of smoking as well as increasing healthcare efforts to improve smoking cessation care. To achieve these goals a PowerPoint module, smoking cessation intervention protocol, educational handout, and post-module test were developed. Implementing this project will take place over the course of five phases during a timeframe of approximately 17 months. The estimated budget for project development, implementation, and evaluation are $83,651.00. Following implementation, evaluation of project goals and objectives will take place at 6 months and 1 year to determine project efficacy.

CHAPTER V

Dissemination

This project has two primary goals: to reduce the rate of smoking within the community, ultimately contributing to a reduction in the national rate, and to increase healthcare efforts to improve smoking cessation care. To achieve these goals, the purpose of this project was to develop a nurse-led smoking cessation intervention protocol to be implemented in an acute care setting for adult patients. Following a review of the literature, the evidence demonstrated best practice to include utilizing the 3 A's smoking cessation assessment framework, combination nicotine replacement therapies (NRTs), post-discharge support, and educational handouts. The project was designed to allow nurses to practice to the fullest extent as evidence has shown nurses to be effective in delivering smoking cessation care.

Provider bias, time constraints, pressure on clinical workflow, and a lack of leadership-level support were some of the prominent concerns identified in the literature review. To address these issues, the project utilized Meleis' Transitions Theory to encourage greater empathy and understanding of lifestyle changes. Additionally, the project was designed to fit seamlessly into preexisting clinical workflows at the facility selected for implementation and requires leadership-level support from both nursing and medicine for the project to be implemented into practice. To aid in determining the feasibility of implementing the project and to gain insight into the project's strengths and weaknesses, a dissemination meeting was arranged with a stakeholder at the facility selected for implementation.

Dissemination Activity

A 1-hour presentation was conducted in the clinical education conference room at the hospital selected for project implementation. The project leader met with a centralized clinical educator to present the project materials. These self-developed materials included the Smoking Cessation Intervention Protocol PowerPoint, module post-test, educational handout, and the five proposed phases of project implementation. The project leader began the meeting with introductions and an explanation of the significance and purpose of the project. The project leader then presented each slide of the Smoking Cessation Intervention Protocol PowerPoint including explanations and rationales of the content included. Following the PowerPoint presentation, the project leader reviewed the module post-test and the five proposed phases for implementation. The centralized clinical educator provided feedback with suggestions and guidance, discussed below in Table 4.

Identified strengths included the ability of the project to be added to the facility's current admission process and the likely ease of adapting the protocol to the EPIC admission flowsheet. The clinical educator also noted the Smoking Cessation Intervention Protocol is very similar in structure to other existing facility protocols. The hospital uses the Clinical Institute Withdrawal Assessment for Alcohol-Revised (CIWA-Ar) protocol to assess and treat individuals withdrawing from alcohol. The clinical educator explained the project's proposed protocol is similar and as such, would likely be more readily accepted and understood by clinical staff.

Additionally, the use of the 1-800-QUIT-NOW line was discussed as a strength since it is a resource the hospital already offers to patients. Because it is underutilized, it requires greater clinical instruction as would occur with project implementation, but the

familiarity staff has with the resource will be of benefit. Finally, the inclusion of the educational handout in patients' admission folders was seen as a strength because it provides written education to patients and can be easily added to existing admission folders.

The clinical educator advised barriers to project implementation would include the possibility the protocol may be interpreted as nurses practicing outside of the nursing scope of practice if it is used as a hospital-wide standing order. The clinical educator likewise explained the facility is currently working on several large hospital-wide projects and the education department, itself, is currently behind on completing clinical competency requirements for staff. Lastly, the clinical educator noted that nicotine lozenges may not be a current part of the facility's medication formulary and would need to be added.

The clinical educator recommended adding the Smoking Cessation Intervention Protocol to the physicians' inpatient admission order set to encourage physicians to order the protocol and require nurses to obtain an order to carry out the protocol for patients if it is not already ordered. Additionally, the clinical educator suggested including more targeted education for physicians regarding the project to help increase utilization. The clinical educator advised the project would need approval from the Chief Nursing Officer (CNO) as well as the facility's nursing directors. To achieve this, the project would need to be presented during the appropriate committee meetings. The clinical educator suggested that while the project may not be able to be implemented fully at the present time, advocating for portions of the project could yield positive outcomes. The clinical educator noted that nicotine replacement therapies (NRTs) are usually ordered in the

form of a daily patch only and are often ordered sporadically. One possible option is to educate on the use of combination NRTs and create an order set that utilizes patches and lozenges together for the treatment of nicotine dependence. Focusing on this change alone could achieve improved outcomes that are closer to the project's goals.

Table 4

Dissemination Activity Feedback

Strengths	Barriers	Recommendations	Guidance
Will fit into existing inpatient admission process and admission flowsheet	Implementing a protocol without physician order may be considered practicing outside of scope	Add Smoking Cessation Intervention Protocol to physicians' inpatient admission order sets	Approval would be needed from CNO and nursing directors: project can be presented at committee meetings
Similar to other facility protocols	Facility is undertaking large projects currently	Targeted physician education to improve utilization of project	Nicotine lozenges could be added to the hospital formulary with the approval of the pharmacy director

Strengths	Barriers	Recommendations	Guidance
Quit-line is well-known and in use at facility	Clinical education department is behind on conducting competency evaluations for approx. 2,000 employees		Consider paring the protocol down to most important components
Educational handouts can be included in existing admission folders	Nicotine lozenges are not currently on hospital medication formulary		

Limitations

During the development of this project, several limitations were noted or discovered. As this project targets the adult patient population, it does not include the assessment or treatment of nicotine dependency in patients under the age of 18. Additionally, because this project has a target setting in acute care, this does not include long-term care, intensive care, maternity, or psychiatric populations. While some of these patient populations may be encountered transiently or occasionally within the acute care

setting of the hospital, the project did not specifically consider clinical treatment differences that may be required with these populations. Additionally, because the individuals in these patient groups may be more vulnerable and often require greater protection and advocacy, it was felt best to exclude these populations from the project's initial development for the sake of ensuring the best treatment and safety. Pending the successful outcome of project implementation, extending the project to include these populations may be beneficial to consider.

As noted in the above section, other limitations include the need to provide more in-depth project education to physicians than is currently offered and amending the project to require a physician order prior to clinical implementation. Because the project is only intended for implementation at one facility, it is unknown what impact the project could have if implemented in facilities of other geographic locations. Differences in patient demographics may impact project outcomes.

Implications for Nursing

The US Department of Health and Human Service's Agency for Healthcare Research and Quality's recommended "5 A's" assessment tool and the abbreviated "3 A's" model have remained underutilized in clinical practice despite ample research demonstrating efficacy. Combination NRTs have demonstrated significant success in treating nicotine dependency, though many facilities fail to encourage the use or do not use it in the recommended manner. Patient education, counseling, and follow-up have been noted to be subpar despite available resources and evidence indicating success. There may be a correlation between poor clinical use of these interventions and the continued prevalence of smoking. Research has demonstrated nurses can have positive

impacts on smoking cessation efforts and brief counseling has been noted to be as effective as intensive counseling methods. Whether through the use of the proposed project and protocol or another method, the nursing profession and other healthcare disciplines have a duty to improve current practices. As the national rate of smoking continues at 13.7%, improved efforts will likely be needed to achieve the Healthy People 2030 goal to reduce the smoking rate to 5%.

Recommendations

Initially piloting this project on a single hospital unit rather than the entire facility could be an easier approach to implementation to determine project feasibility. Randomly selected patients admitted to the hospital to trial the project could also be a potentially easier trial method. Assuming project implementation is successful and generates successful outcomes, the project could be expanded to include other patient populations outside of the adult population. Because research evidence demonstrated success with designated smoking cessation roles, the project may benefit from expanding to include a designated department of individuals who facilitate and monitor the Smoking Cessation Intervention Protocol. At present, for the project to be trialed at the selected facility, it may be best to wait until other larger projects have been completed and then begin the process to receive approval for project implementation.

Conclusion

Cigarette smoking leads to preventable death, disease, and morbidity in the US. Healthcare professionals have an obligation to address this concern. To increase healthcare efforts to improve smoking cessation care and witness a reduction in the rate of smoking to the Health People 2030 goal of 5%, it will be necessary to make changes to

clinical practice. The Smoking Cessation Intervention Protocol and the project that has been developed to support this resource were synthesized from a thorough review of the current literature. With each component representing best practice as determined through research, successful implementation of the project would provide hospitalized adult patients with the best chances of quitting smoking. In the future, it is hoped this project will have an opportunity for implementation and further study.

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