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Running Head: AN EVIDENCED BASED INTERVENTION FOR TOBACCO SMOKING CESSATION

Provider Focused Process Improvement Project to Enhance Patient Participation in a Tobacco Smoking Cessation Program

Capstone

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Abstract

United States soldiers face the most heinous dangers on a daily basis while serving our country. Despite knowing the risks, they are courageous and willing warriors. They are equipped with training, knowledge, and equipment to combat these dangers. However, despite all the training, despite the equipment, and despite their courage, there is a danger that lurks beyond those associated with military service and it is tobacco smoking. Tobacco smoking is associated with life threatening and life limiting disease. The effects of tobacco smoking may take years to present which can provide a false sense of invincibility to the Veteran.

Tobacco smoking has declined among the general population. However, the same is not true among the military Veteran population. Reported estimates suggest that smoking is 40% higher among Veterans compared to the general population. The literature also suggests that smoking-related illnesses have been higher among patients in the Veterans Health Administration compared to the general population. Smoking tobacco presents a major risk factor for heart disease as well as chronic obstructive pulmonary disease. Smoking cessation is associated with reduction in prevalence of these diseases, decreased exacerbations, and reduced mortality.

This capstone report presents an evidenced based intervention that is focused on providers in a Primary Care setting. With the inclusion of the Transtheoretical Model as a framework for understanding patient readiness, providers were provided with education related to strategies of brief motivational interviewing. The goal of this process improvement was to increase the confidence and skill level of providers to work with ambivalent patients relative to tobacco smoking habits.

Problem Statement

The increased incidence of smoking tobacco among Veterans, a result from increased accessibility and as a way to socially integrate during their time in military service, places this population at risk for long term health impairments including cancer and respiratory diseases. Smoking tobacco presents a major risk factor for heart disease as well as chronic obstructive pulmonary disease. This risk is further compounded by the lack of desire and/or inability to stop smoking tobacco as well as the lack of providers' emphasis on tobacco cessation programs beyond the prescribing of nicotine replacement therapy.

Evidence of the Problem

According to the Department of Veterans Affairs (2010), tobacco smoking is a leading health disparity among Veterans, characterized by higher rates of smoking and less access to treatment than the general population. Tobacco smoking among military Veterans is 40% higher compared to the general population which has had a noted decline in rates of smoking tobacco (Hamlett-Berry, Davison, Kivlahan, Mathews, Hendrickson, and Almenoff , 2009 & Bastian & Scott, 2010). Hamlett-Berry and associates (2009), cite that smoking tobacco remains the leading cause of preventable death and disease in the United States. It is estimated that smoking is responsible for 8.6 million illnesses and 438,000 deaths each year. Although some studies indicate that smoking rates in the military have declined in recent years, alarmingly one study is reporting that almost three quarters of Veterans report cigarette consumption compared to 48% of the general population (Bastian & Scott, 2010). Eggleston, Straits-Troster, and Kudler (2009) discussed that many military personnel report that they began smoking cigarettes as a social

activity, a way to pass time. It is believed that this activity intended to be occasional, soon becomes an addiction.

Other causal factors to cigarette use relate to their accessibility and low cost on military bases (Bastian & Sherman, 2010). An identified concern for the Veterans Health Administration is the large number of tobacco addicted patients that seek services. Bastian & Sherman, (2010) note that the Department of Defense has set dates in the past for the military to become smoke free yet there has been no implementation of such plan to date. An additional factor discussed by Bastian & Sherman (2010) is the fact that many Veterans have co-morbid conditions such as mental illness including post traumatic stress disorder and depression. They suggest that a cessation program must consist of a combined approach that treats the mental condition as well as the tobacco addiction.

The Veterans Health Administration has implemented programs within Primary Care to combat tobacco abuse and dependence (Eggleston, Straits-Troster, & Kudler, 2009). Interventions include the use of clinical reminders to screen patients annually, a prompt to advise smokers to quit, use of medications such as nicotine replacement therapies, use of a quit line, and the elimination of co-payments for smoking cessation counseling. At first glance, these efforts appear very comprehensive. However, challenges exist. According to Duffy, Karvonen-Gutierrez, Ewing, and Smith (2009), smoking cessation programs within the VA are based on clinical guidelines via outpatient groups yet the literature shows that these groups are poorly attended. This is consistent locally.

There is an identified gap in the literature relative to the effectiveness of smoking cessation interventions. According to Hamlett-Berry and colleagues (2009), the Veterans Health Administration has implemented a number of interventions within the system aimed at smoking

cessation yet their full effects will not be known for some time. Bastian & Sherman (2010) also acknowledge that there is lacking research regarding the effectiveness of the Veterans Health Administrations interventions for smoking cessation programs. They suggest that there needs to be a database of smokers in the Veterans Administration that tracks smokers who quit, through what resource, and for how long a period of time. The implications related to the lack of data regarding the effectiveness of existing smoking cessation programs implores the need for a comprehensive assessment of the existing program to ensure that any changes or recommendations for changes result in evidenced based standardized clinical practices the result in greater numbers of military Veterans seeking, participating in, and completing smoking cessation programs.

The challenges cited within the literature are exist locally. Strategies to provide referrals into the smoking cessation program vary widely and are not consistent. Tracking of referrals does not exist within the current system. Although computerized clinical reminders provide some data, it is limited as to tracking mechanisms.

Beyond the technological challenges and gaps, there are human factors. Initiating the discussion around smoking cessation can be a challenge (Applegate, Sheffer, Crews, Payne, and Smith (2007). They cite that a central role for primary care is the delivery of cessation programs. Yet, they cite that a survey of primary care providers (n=2043) found that 32% of patients were not asked about smoking, 81% of smokers were not offered assistance and less than 2% were offered medication. Several barriers were identified and included lack of time, lack of provider knowledge, lack of resources, lack of reimbursement, and lack of counseling skills.

During a discussion with the local service line Chief, it was agreed that a performance improvement project was necessary and that it should focus on primary care providers. This was

an agreed upon approach. The essence of this performance improvement project will be the dissemination of information relative to a motivational interviewing strategy to guide the discussion of participation in a tobacco smoking cessation program. Stakeholder support was obtained and a letter of agreement was signed (appendix a).

Goals and Objectives

The overarching goal for this process improvement is the improvement in the health for Veterans with a history of smoking.

Objectives included the following:

- Fifty percent of the providers in Northampton will participate in the process improvement intervention.
- Fifty percent of providers will complete a Likert Self-Assessments
- 75% of participating providers will complete a follow up Likert Self Assessment
- 75% of participating providers will use a confidence ruler to assist with discussion about participating in a tobacco cessation program.

Review of the Literature

Motivational interviewing, tobacco smoking cessation, and Veterans Health Administration represent a combined unknown potential for treatment of Veterans who smoke tobacco. A comprehensive electronic database search was completed using CINAHL, Pub Med, Cochrane Library, and Medline. Search terms included smoking cessation, tobacco cessation, motivational interviewing, and Veterans smoking cessation, 1997-2010. Selected articles included smoking (tobacco cessation) and motivational interviewing as well as Veterans and

smoking cessation. Articles associated with motivational interviewing and smoking cessation were critically reviewed based on the level of research evidence and graded according to quality, quantity, & consistency of the findings. These included meta-analyses, randomized controlled trials, systematic reviews, and non-randomized controlled trials.

There is evidence to show an association between motivational interviewing and smoking cessation (Bredie, Fouwels, Wollersheim, & Schippers, 2009; Dunn et al., 2001; Heckman, Egleston, & Hofmann, 2010; Lai & colleagues, 2010; Lundahl et al., 2010; Soria et al., 2006). Two studies focused on smoking cessation in the presence of mental illness (Baker, Richmond, Haile, Lewin, Carr, Taylor, Jansons, and Wilhelm, 2006; Siru, Hulse, & Tait, 2009). Three of the studies included evidence based strategies within the Veterans Health Administration and tobacco use and addiction among Veterans (Bastian &Scott, 2010; Duffy et al., 2009; Hamlett-Berry et al.,2009).

The Veterans Affairs in coordination with the Department of Defense revised tobacco cessation guidelines in 2004 to reflect evidence-based interventions including nicotine replacement therapy and counseling (Hamlett-Barry et al., 2009). According to Duffy and associates (2009), counseling might include nurse level guidance, physician level guidance, and follow up telephone calls.

Despite efforts of the Veterans Health Administration, more needs to be done to effectively intervene to provide comprehensive smoking cessation. Bastian & Sherman (2010) cite that 70% of smokers, who use the Veterans Affairs for their medical care, want to quit. This presents a lofty challenge to primary care providers within the Veterans Health Administration and locally at the Northampton VAMC.

Motivational interviewing is a therapeutic approach to address problematic health behaviors such as smoking tobacco (Rollnick, Butler, and Stott, 1997). They discuss that motivational interviewing is a process that can last thirty to forty minutes. However, they point out that primary care providers are pressured for time and that interventions that are time consuming are not realistic within the office setting. This is consistent with the barriers expressed by primary care providers at the Northampton VAMC. Rollnick, Butler, and Stott, (1997) indicate that brief motivational interviewing strategies are effective. Strategies, such as confidence rulers, include the use of a global assessment of level of motivation. They suggest that the following questions provide an assessment associated with motivational interviewing:

1. If on a scale of 1-10, 1 not motivated, 10 very motivated, where are you relative to your motivation to quit smoking?
2. If you were to decide now to quit smoking, how confident are you that you would succeed on a scale of 1-10?

According to Rollnick, Miller, and Butler (2008), confidence rulers can provide information about the patients' motivation to change as well as their readiness, desire, and committent. They suggest a value in keeping a record of the patients' placement on the rulers as a basis for future discussions. According to Rollnick and colleagues (1997), these questions can be asked with little time investment yet they yield significant information that allows the provider to focus on the patient's actual perspective.

The U.S. Department of Health and Human Services provides a model that enables providers to address tobacco smoking cessation. Ask, advise, assess, assist, and arrange follow up, known as the Five A's, is an effective, yet brief strategy for a clinician to understand the implications of tobacco smoking as well as cessation for the patient (Fiore, Jaen, Baker, Bailey, Benowitz,

Curry, et al., 2008). Each of the five A's within the model provides cues. Ask refers to identifying and documenting current and past history of smoking tobacco at every visit. Advice refers to encouraging every smoker of tobacco to quit. Assess refers to assessing the patient's readiness to quit. Assist refers to assisting willing patients with appropriate treatment plans including referrals to tobacco cessation programs. Arrange refers to ensuring there is a follow up in place.

Synthesis of the Evidence

Motivational interviewing, as a part of a tobacco cessation comprehensive program, has potential that should be considered. Studies that included randomized control methods suggest a relationship between motivational interviewing and smoking cessation (Baker et al., 2006; Bredie, Fouwels, Wollersheim, & Schippers, 2009; Dunn et al., 2001; Heckman, Egleston, & Hofmann, 2010; Lai & colleagues, 2010; Lundahl et al., 2010; Rollnick, Butler, Kinnersley, Gregory, and Mash 2010; and Soria et al., 2006).

Rollnick, Butler, Kinnersley, Gregory, and Mash (2010), discuss that there is considerable evidence to support the use of motivational interviewing as an intervention for tobacco smoking cessation. They cite a systematic review of 72 studies that showed motivational interviewing was more effective than traditional advice giving in 80% of the studies reviewed.

Heckman and colleagues (2010) completed a meta-analysis of 31 smoking cessation studies, representing a total sample size of 9485 participants. The major finding from this analysis indicated that motivational interviewing is effective for smoking cessation with an overall odds ratio of 1.45 (95%CI 1.14 to1.83). It is noted that this analysis included studies of adolescents as well as adults. The authors discuss another limitation that included the lack of

accounting for variability with the implementation of motivational interviewing, specifically the amount of time for the motivational interviewing session. These findings are consistent with the findings of the meta-analyses completed by Lai and associates (2010) as well as Lundahl and associates (2010).

Soria and colleagues (2006) completed a randomized control study to establish if motivational interviewing was more effective than brief advice for smoking cessation. This study was completed in Spain and findings cannot be generalized to the United States without consideration for variables such as differences in culture and differences in healthcare systems. However, this work is important as it considers the intervention of brief advice which is used currently within the Veterans Health Administration as a strategy for smoking cessation (Duffy et al., 2009). Motivational interviewing was 5.2 times more effective for tobacco cessation compared to brief advice (95%CI 1.63 to 17.13) (Soria et al., 2006).

A search of the Cochrane database provided the strongest evidence to support the effectiveness of motivational interviewing and smoking cessation. Lai and colleagues (2010), completed an analysis of 14 studies that included randomized controlled trials that were published between 1997 and 2008. In total, 10,000 smokers were included in the overall sample. Unlike other meta-analyses included in this paper, Lai and associates (2010) accounted for the time duration of the motivational interviewing session as well as provider type (physician, nurses, and counselors). The comparison group included brief advice. The major findings from this meta-analysis suggest that motivational interviewing is more effective than brief counseling (RR 3.49, 95%CI 1.53 to 7.49). Results revealed modest but significant increase in quitting associated with motivational interviewing (RR1.27; 95%CI 1.14-1.42. Subgroup analyses

revealed that motivational interviewing was most effective when delivered by primary care physicians (RR 3.49%; 95%CI 1.53-7.94).

The authors note that this evidence is limited and that factors such as familiarity with the primary care provider may account for the increased effectiveness. Lai and colleagues (2010) and Blanchard (2010) noted the following implications for practice:

- Motivational interviewing though statistically modest was more effective with smoking cessation compared to brief advice.
- Motivational interviewing when provided by physicians seemed more effective compared to non-physicians such as nurses. However, they note that there are unaccounted variables that might account for this finding.
- A salient finding included that sessions 20 minutes or more of motivational counseling were more effective compared to shorter sessions (RR 1.31, 95%CI 1.16 to1.49).

According to Blanchard (2010), motivational interviewing may assist with smoking cessation and that people need to be assessed for their motivation.

Considering that many Veterans have co-morbidities such as mental illness, a recommendation for any proposed intervention must include a perspective related to the impact and/or benefit for those patients with mental illness. An alarming concern noted by Hamlett-Berry and colleagues (2009), indicates that historically there has been a practice among providers to ignore tobacco use as a clinical issue requiring attention.

Siru and colleagues (2009) completed a review of fourteen studies that assessed motivation to quit smoking and people with mental illness and cited that people with mental illness are underserved respective to treatment for tobacco use. Methods included a database

search of studies related to motivation between mental health and general populations. This review looked at motivation from the perspective of the patient's readiness to quit. Strengths of the study included the fact that they focused on a population with mental illness. Weaknesses of this study were noted that it was not specific to motivational interviewing as an intervention.

Siru and colleagues (2009) noted that there has been commonly held false belief that patients with mental illness are not motivated to quit smoking. They cite that results indicated there is evidence to suggest that people with mental illness are as motivated as the general population to quit smoking. They summarized their findings and concluded that motivation to stop smoking among people with mental illness was found to be comparable to the general population. Although this review did not include motivational interviewing as an intervention, it is significant as it provides evidence patients with mental illness can be motivated to quit smoking.

According to Baker and associates (2006), a total of 298 smokers with a history of mental illness were studied. In this study, the outcomes revealed that motivational interviewing was associated with reduced smoking versus smoking cessation (odds ratio of 3.89, $p<0.001$). The authors assert that their findings are consistent with other studies and reflective of the variable of mental illness. Implications of this study suggest that more research is necessary. Yet, this work provides a suggestion that motivational interviewing is an effective intervention for a smoking cessation program targeted towards people with mental illness. Baker et al., (2006) note that a weakness associated with this study is the variance within the implementation of motivational interviewing.

Application of a Theory

Motivational interviewing has been demonstrated to be an effective intervention for encouraging Veterans to participate in smoking cessation programs. However, it is helpful to consider the readiness of the patient relative to changing health behaviors. The Transtheoretical Model is an effective model to provide a framework for the readiness of patients to change health behaviors and allows for fluctuation in readiness (Woody & Carlton, 2008). According to Miller and Rollnick (2009), motivational interviewing and the Transtheoretical Model are closely tied having been developed around the same time. They note that people with substance abuse issues who are not ready for change, need an alternative approach from the traditional stance that the patient is not motivated. Miller and Rollnick (2009) suggest that it is the clinician's work to find the motivation within the patient. They note that motivational interviewing is not based on the Transtheoretical Model yet that the stages of readiness provide the clinician with information as to how to approach the patient.

Prochaska, DiClemente, and Nocross (1992) state that people considering life style modifications and health behavior changes go through six stages including precontemplation, contemplation, preparation, action, maintenance, and relapse. In the precontemplation stage the patient has no intention of changing and is not completely aware of the health risks of the behavior.

Contemplation refers to the stage when patients become concerned about the problem but are not convinced they need to make a change. In the contemplation stage, Prochaska and colleagues (1992) describe the patient as knowing what they need to do but not ready to do it. Patients in the preparation stage are considering actions within a time frame such as a month. In some cases they have reduced their exposure to the unhealthy behavior but not entirely stopped

it. In this stage the patient is tapering themselves from the exposure in preparation for complete abstinence. The action stage represents the patient's commitment to overcome the problem health behavior and that the patient has demonstrated significant alterations of the behavior for a period of one day to six months. Maintenance refers to a stage where the patient makes continued efforts to prevent relapse. Prochaska and associates (1992) point out that maintenance is not a terminal stage and that relapse is common. Therefore they included in their later version of the model the stage of relapse.

It is important to understand that patients cycle in and out of various stages (Prochaska and colleagues, 1992). Fluctuations within stages can be related to the patient's struggle with anticipated gains versus anticipated losses (Janis & Mann, 1977). They discuss decisional balance as the process that a patient undergoes when considering changing a health behavior. According to Janis and Mann (1977) there are eight factors that patients consider as part of the balance sheet (pros and cons) that include gains for self, losses for self, gain for significant others, losses for significant others, self-approval, self-disapproval, approval from others, and disapproval from others. According to Di Noia & Prochaska (2010), decision balance explains the decision making process that patients go thorough as they progress or regress among the stages.

The implications of the Transtheoretical Model have been questioned. Bredie and associates (2010) state that patients were assessed according to their readiness to quit smoking in accordance with the Transtheoretical Model. They report that they could not appreciate a significant difference between the stages of change and the determination of quit versus not quit. The authors state that the sample size was low (n=122). Also, this study was limited to cardiovascular outpatients. Applicability to other cohorts needs to be considered. The authors

note that this study only focused on a single outpatient center, a limitation relative to unknown and unidentified variables that might be unique to that specific center. Bridle, Riemsma, Pattenden, Sowden, Mather, Watt, and Walker (2005) completed a systematic review of thirty seven randomized control trials that evaluated the effectiveness of the Transtheoretical Model. Thirteen of the thirty seven studies were related to smoking cessation. Findings showed that three studies supported the use of stage based intervention compared to usual care, two comparisons were inconclusive, and eight comparisons showed no difference. Bridle and colleagues (2005) discuss their findings and concluded that there is limited evidence related to the effectiveness of stage based health behavior change.

After critically considering the literature, the Project Director proposed that the Transtheoretical Model as well as strategies associated with motivational interviewing will provide the healthcare provider with dialogue extenders at the impasse when patients are resistive, such as those in the precontemplation stage, those who are ambivalent, as well as those patients in the contemplation stage.

Description of the Group, Population, and Community

The primary care clinic at the Northampton VA Medical Center sees approximately five thousand patients. There are six primary care providers; one physician's assistant and five medical doctors. There are two registered nurses, one licensed practical nurse, and three medical assistants. Discussions with the primary care providers indicated that time constraints and lack of knowledge regarding motivational interviewing strategies were significant barriers to thorough exploration of tobacco smoking cessation with Veterans who smoke.

Veterans, male and female, range in age from 18 and above. Most live in the Western Massachusetts geographical area. Some travel. Many have dual care so that they can benefit from the cost savings with medications; they have a primary care provider in the community as well as the VA. Veterans seeking dual care are often not interested in services beyond medication. This poses a consideration for programmatic implementation and evaluation from the perspective that these Veterans might be seeking smoking cessation assistance outside of the VA. Other programmatic considerations include recognizing barriers such as transportation and needed assistance for those with physical challenges as well as advanced age.

Stakeholders for this process improvement project included:

The Veterans

Chief of Primary Care

Tobacco Smoking Cessation Program Coordinator

Acting Chief of Mental Health

The Veteran Advocate

Primary Care Providers

Primary Care Staff

Information Technology Coordinator

Organizational Analysis; Barriers and Resources

At the United States Department of Veteran's Affairs, Northampton Veterans Affairs Medical Center, all Veterans are screened for tobacco use. If positive, they are asked if they are ready to quit and if so, they are provided two options; Nicotine replacement therapy and with a referral to a smoking cessation program. According to the clinical practice guideline, Treating

Tobacco Use and Dependence: 2008 Update (US Department of Health and Human Services), the combination of counseling and medication is more effective for sustained tobacco smoking cessation than either intervention used individually. However, discussion with stakeholders at the Northampton Veteran's Affairs Medical Center revealed several gaps. Findings from discussions revealed:

- According to primary care providers, it was very time consuming to focus on tobacco smoking cessation beyond completing the clinical reminder.
- According to Informatics, data was not being currently captured related to how many Veterans were actually referred to the tobacco smoking cessation program.
- Primary Care Providers expressed lack of education relative to motivational interviewing strategies.
- Referrals were completed verbally between provider and Veteran preventing a "follow-up."
- Primary care providers were not completely knowledgeable of VA guidelines pertaining to tobacco smoking cessation.

Table One

Actions In Place	**Barriers**	**Resources**
Primary Care Providers	a. Time b. Lack of standard approach	• Stakeholder Support • Provider Interest • Existing VA Tobacco Smoking Cessation Guide
Veteran's Affairs Tobacco Cessation Guidelines	a. Lack of Provider Awareness b. Lengthy Document	• Evidenced Based
EMR	Not utilized to the extent possible	• Provides Consistent Documentation Methods • Significant resource

		for Post Doctorate Continuation
Referral Process	No tracking mechanism for referrals. No ability to follow up	• Tobacco Smoking Cessation program is in place

Protocol for Individualized Project/Program Tailoring

The Department of Veterans Affairs has in place a comprehensive tobacco smoking cessation program that includes a stepped approached approach to smoking cessation. Gaps with implementation included patient ambivalence. Motivational interviewing is a process rather than a technique that allows exploration of ambivalence as a means to shared decision making. It was noted that the intention of this process improvement project was not to teach providers to be proficient at motivational interviewing. Such an undertaking would be counter to the barriers that are cited within the literature as well as the gap analysis of the agency. Rather, the intention was to provide an evidenced based strategy that was rooted within motivational interviewing, was time efficient, and was patient centered. Strategies within motivational interviewing and the Transtheoretical Model provided a framework from which providers used to as a means to bridge the ambivalent patient with an effective intervention such as a smoking cessation program.

Outcome Indicators

The intention of this project was to incorporate a time sensitive intervention into the typical visit that enables primary care providers to address tobacco smoking cessation behaviors of their patients. Emphasis of this project was on the providers and the use of a time efficient strategy, the confidence ruler, which is consistent with the tenets of motivational interviewing. The overarching goal for this process improvement project is to improve the health of Veterans who smoke tobacco through increasing the abilities of providers to discuss health behavior

change. The following outcome indicators were established as a barometer as to the effectiveness of the strategy:

a. Fifty percent of the providers in Northampton would participate in the process improvement intervention.
b. Fifty percent of providers would complete Likert Self-Assessments
c. 75% of participating providers would complete a follow up Likert Self Assessment
d. 75% of participating providers would use a confidence ruler to assist with discussion about participating in a tobacco cessation program.

The proposed end result of this process improvement project was the culmination with a standard operating procedure reflective and inclusive of the feedback from providers within this project.

Table Two

Action	Goal	Outcome
Provider completes initial Likert Self-Assessment	50% of providers will complete the assessment	67% of providers completed the initial self-assessment.
Providers participate in education series relative to Motivational Interviewing, Confidence Rulers and 5A's	75% of project participants will complete this assessment	100% of participants completed the educational series.
Provider completes a follow up Likert Self Assessment	75% of participants will complete this assessment	75% of participants completed the post self-assessment.

Costs/Budgeting

An undertaking of program implementation must be inclusive of a cost/benefit analysis. According to Issel (2004), cost must be considered with relation to the number of programs being considered. For example determining the benefits of a lower cost program in comparison to higher cost programs needs to include an appraisal of the benefits of each program as well.

With relationship to cost and budgeting, the need to finance several programs or versions of a program must be considered given the complexity of the issue of addiction and tobacco smoking; it is understandable and expected that strategies will need to be modified from time to time.

For this performance improvement project, the Project Director focused on an intervention that is relatively low cost. The majority of the costs associated under the responsibility of the Veteran's Affairs Medical Center, are related to the time of the providers for education. The actual implementation of the intervention was budget neutral as the intervention was completed during administrative time. Initially in the proposal, the education session was going to be provided during a blocked out visit time slot. However, this was not possible and therefore providers agreed to complete this during their administrative time period.

There were other costs to review. The Project Director recognized the need to strengthen his knowledge and credentials relative to motivational interviewing and smoking cessation. The costs associated with the responsibility of the candidate are related to training courses in motivational interviewing and tobacco cessation programs. Appendix b provides a detailed outline of the cost breakdown. Table three provides a summary of these expenses with an inclusion of benefits. Beyond the benefits for the Veterans health and quality of life, strategies to reduce the number of Veterans who smoke will decrease the long range costs associated with the care of chronic illnesses related to smoking tobacco. Additionally, this process improvement program provided providers with a specific intervention that was associated with motivational interviewing and had the potential to increase their skill and confidence to work with patients around unhealthy behaviors such as smoking tobacco.

The final cost of this process improvement project was consistent with the predicted cost at $1475.00. The benefits of this expense have not yet been realized beyond the impact on the

providers which is not underestimated. However, it is recognized the cost savings benefits of smoking cessation program are significant as well as the impact on the quality of life for the person.

Table three

Responsible	Costs	Benefits
VA-supplies and estimated cost of providers' time	435.00	a. Provides an opportunity for increasing the skill of providers relative to communication b. Decrease the costs associated with medical management of chronic illness associated with smoking tobacco
DNP Candidate-training courses	1040.00	a. Enhance skills b. Build credibility
Total costs	1475.00	

IRB and Ethical Considerations

The purpose of this project is performance improvement and not considered research. Therefore, the University does not require Institutional Review Board permission.

Plan for Implementation

The process improvement project proposal was the result of a gap analysis within the agency, a critical appraisal of the literature, and many discussions with my University of Massachusetts faculty committee members as well as the agency committee member. Additionally, the Project Director completed a self-assessment of strengths and weaknesses around the issue of Veterans, tobacco smoking cessation, and motivational interviewing. As a result, the Project Director identified several strategies to broaden his knowledge as well as strengthen his credibility as a resource. The Project Director enrolled in a two day motivational interviewing class that culminates with a certificate of completion that demonstrates

comprehensive training of the core elements of motivational interviewing as well as experiential practice of motivational interviewing skills and techniques. The Project Director also recognized the importance of having a comprehensive understanding of tobacco smoking cessation programs. The Project Director enrolled in an on-line program at the University of Massachusetts Medical School which provides eight modules of instruction focused on working with individuals and tobacco smoking cessation. The Project Director enrolled in an on-line program provided by the Florida Area Health Education Centers. The Project Director specifically chose this additional course because it provides further discussion relative to the role of motivational interviewing as well as assessing stages of readiness. The Project Director was able to gain confidence from the combination of these educational opportunities and the literature review. As a result, the Project Director was able to successfully implement a process improvement project related to providers, skills, and working with patients who smoke tobacco.

The Project Director implemented a process improvement project that was focused on primary care providers' practice and beliefs relative to patient discussions about tobacco smoking cessation. This project included participant self assessments, a thirty minute education session, a five week implementation opportunity, two check-in opportunities, and a final self-assessment and debrief opportunity.

Providers completed a pre-education session self assessment Likert scale (appendix c) to assess their confidence level of influencing health behavioral changes in general, knowledge level of motivational strategies and confidence level to influence patients to participate in tobacco smoking cessation programs. Providers were provided with a participant packet that included an overview of this process improvement project and two confidence rulers.

Providers participated in an education session that provided guidance on effective communication styles for addressing ambivalence and training on the confidence ruler motivational strategy as well as the use of the five A's. Providers were educated on the use of confidence rulers within the context of motivational interviewing and will be provided with confidence rulers that can be used to augment the discussion of referral to the tobacco smoking cessation program.

Providers were provided with a five week period to implement this skill. During the five weeks there were two check-in opportunities with each provider.

At the conclusion of the five weeks, providers completed a follow up Likert Self Assessment (see appendix d) with additional open ended questions to solicit qualitative feedback. Comparison of assessments was completed to determine the impact on providers of the process improvement project. Providers were provided with a copy of the results, a thank you note, and a token of appreciation for their participation.

Timeline

According to Issel (2004), the timeline should reflect activities that are essential to the project, sequential, and in relationship to the expenses associated with the project. The timeline also provides a tracking mechanism to ensure that milestones are met in an effort to achieve the ultimate goal. This performance improvement project included training activities, monitoring activities, assessment activities, and evaluation.

Table four

Activity	Target Date	Actual Date
Recruit Providers	1/21/11	2/2/11
Provider Likert Self Assessment #1	2/12/11	2/11/11
Attend Motivation Interviewing Training	1/26/11-1/28/11	NA
Complete tobacco smoking cessation online	2/11/11	3/20/11

courses at UMASS Worcester and University of Florida		
Provider Training Intervention	2/23/11	2/23/11
Five week Practice Opportunity	4/6/11	Ended 4/1/11
Likert Self Assessment 2	4/11/11	All completed assessments received 4/21/11
Evaluation of Performance Improvement Project	4/12/11-4/30/11	4/22/11-5/1/11
Final Report to Agency	4/30/11	5/8/11
Presentation to Professional Audience	5/12/11	5/12/11

Evaluation

As stated, the intention of this project was to incorporate a time sensitive intervention into the typical visit that enables primary care providers to address tobacco smoking cessation behaviors of their patients. The opportunity to participate was voluntary and was open to all primary care providers. Ultimately four primary care providers participated representing 67% of the practice. Three of the four participants fully completed the process improvement project inclusive of a pre-education self assessment, education segment, practice, and post self-assessment representing 75% of the project participants. For evaluation purposes, only those participants who fully completed the project were included in the analysis.

Data Analysis-Quantitative

A quantitative approach was considered. A one group pre-assessment, post assessment design was implemented. The intention was to determine, if any, the impact on providers with a low cost, time efficient, evidenced based intervention to address the complexity of discussing tobacco smoking cessation with Veterans. A parametric statistical analysis was completed with a paired t test based on data obtained from pre and post self assessments (table five). It is recognized that this analysis is based on a very limited sample size (n=3) and therefore any conclusions should be guarded.

The analysis was completed with two models; one on the actual questions (n=6) and the second on the individual participant (n=3). There were a total of six questions with a ranging value of 1 (strongly disagree) to five (strongly agree). Pre self assessment means were compared to post self-assessment means. There was only one question that resulted in statistical significance (p=0.0158) which was question two that asked about experience using a confidence ruler. Each participant was also evaluated by comparing their overall pre and post response means. Each provider demonstrated an increase in their mean on the post assessment. Participant A demonstrated the most increase with a difference in pre and post means of 1.67. However, there was no statistical significance appreciated with any of the participants.

Table Five

	Mean Pre/Post	**SD Pre/Post**	**t value**	**Two tailed P value**
Question One	4.67/4.67	0.58/0.58	0.000	1.000
Question Two	1.67/4.67	1.15/0.58	4.025	*0.0158
QuestionThree	2.67/3.67	1.15/1.53	0.905	0.417
Question Four	4.67/4.67	0.58/0.58	0.000	1.000
Question Five	3.33/4.33	2.08/0.58	0.802	0.468
Question Six	3.33/4.67	1.15/.058	1.789	0.148
ParticipantA	3.33/5.00	1.86/0.00	2.193	0.0531
Participant B	3.33/3.83	1.21/0.41	0.958	0.361
ParticipantC	3.50/4.67	1.64/0.52	1.659	0.128

*statistically significant $p<0.05$

Date Analysis-Qualitative

A key component of this process improvement project was the solicitation of feedback from participants. Participants were given an opportunity to provide feedback during this initial self-assessment meeting, two check-ins during the five week practice session, and with the post self-assessment. The feedback from the initial self-assessment meeting and two check-ins during the five week practice session were done orally and the final feedback was collected in writing

allowing the participants to provide feedback without the immediate presence of the project director. Knafl & Howard (1984) provide a framework to discuss qualitative findings. They suggest describing the methods of data collection and linking themes. The method of data collection was through brief meetings with each provider and written feedback from each provider at the final self-assessment.

During the initial meeting, the common theme among the participants was lack of time to use the confidence ruler (3 of 3 providers), lack of knowledge of the process (2 of 3 providers), and concerns that the patients will not like it (2 of 3 providers). Lack of time was a theme identified during the gap analysis. Participants were encouraged through review of the literature that indicates that this process is actually time saving. They were also reassured that they would be receiving education and instruction. They expressed a willingness to continue. Originally there were four providers however one was lost to be re-assigned.

The check-in opportunities were quite challenging in terms of scheduling. The initial check in was scheduled during the end of week two of the five-week practice session. Three of the three participants reported that they had used the ruler. One reported that it increased the visit time. Three of the three reported that they felt more confident using the ruler. Three of the three were willing to continue with the project. The second check in was scheduled during the end of week three. One provider was on leave. Two of two reported that the rulers were timely. They both agreed that it was very useful in “furthering” the discussion. This was significant. This addressed the issue of ambivalence and the benefit of the ruler. They both stated that the ruler provided a tangible point for more discussion. They also reported that the patients responded very positively to the ruler.

The final solicitation of feedback was obtained from written responses. Participants were asked four questions. The first question asked the participants to describe the positive aspects of the project. Responses included the rulers were helpful (2) and "I like the ruler, (1). Question two asked the participants to describe the negative aspects. Responses included none (2) and difficult to always find time (1). Question three asked participants about the response from patients. Three of the three participants responded that it was positively received by patients. The fourth question was a very open ended question asking for comments. Two responded with no comments. One responded that the ruler was so helpful that they will be using it within their practice.

During an impromptu discussion, after collect the final self-assessments, all three providers commented that the hands-on rulers were much more useful that simply verbalizing it. All three also indicated that they will be continuing to incorporate them into the exam room discussions.

Dissemination of Findings

This is a performance improvement project. Findings were presented within the clinical context where this project was undertaken. A report was submitted to the agency. Findings will be presented through a lecture associated with a power point presentation at the University of Massachusetts' Amherst School of Nursing. Program participants were also provided with a final report that included aggregate findings.

Post Project/Future Implications

There are many potential opportunities for continuation of this project. Immediate implications include the expansion of the project from the pilot participants to the clinic at large. A proposal will be presented to the Health Promotion Disease Prevention Committee in June 2011. An original outcome measure for this project was the development of a standard operating procedure. However, after discussion with the Chief of Primary Care, it was decided that this final report would be reported the Health Promotion Disease Prevention Committee. A proposal will be presented to the Health Promotion Disease Prevention Committee in June 2011.

Health behaviors in general are very difficult to address. This performance improvement project could be used to model additional health threat related to health behaviors. Considering that performance improvement projects are associated with research already completed, such an undertaking would require a separate and unique review of the literature as well as synthesis of the literature to ensure that interventions are evidenced based and specific to the issue.

Conclusion

The intention of this process improvement project was to provide providers with a tool to facilitate discussions relative to tobacco smoking cessation. Specifically, I provided providers with a low cost, time efficient, evidenced based intervention to address the complexity of discussing tobacco smoking cessation with Veterans. The potential impact of this process improvement project originally included the development of a standard time sensitive approach that provides guidance to address tobacco smoking cessation with Veterans. While that might still be an outcome, the dynamics of the setting which includes two different departments, were not conducive to the implementation of a standard operating procedure.

A parametric analysis using a paired t-test to assess for statistical significance was completed. The results with one exception were not significant. However, the sample size did not represent enough power to be meaningful in terms of statistics. Based on the discussions and responses from providers, I completed a qualitative analysis identifying clusters of elements, noting patterns, and themes. Ultimately, it can be concluded that this a low cost, time efficient, evidenced based intervention to address the complexity of discussing tobacco smoking cessation with Veterans was effective in terms of providing providers with more confidence and experience.

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Appendix a

Responsible	**Item**	**Program-Spring 2009**	**Expenses**
VA	(4) Provider Time	.25 for initial recruitment meeting .25 for Self Assessment One .5 for education .25 self assessment #2	X/$83/hour=expense 1.25x83=103.75 103.75 x 4 = 415.00
UMass	Dr. DeMartinis Dr. Choi	20 hours 10 hours	
DNP Candidate	Tobacco Cessation training	UMASS Worcester	125.00
DNP Candidate	Tobacco Cessation Training	University of Florida	80.00
DNP Candidate	Motivational Interviewing	Seattle Washington	835.00
VA	Photocopies	Materials	20.00

Appendix b

Pre Self Assessment

	1	2	3	4	5
I feel confident to address smoking cessation with resistive patients	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
I have experience using a confidence ruler	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
I feel I can convince a resistive patient to participate in a smoking cessation program	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
I am familiar with stages of readiness to change	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
I feel confidence rulers can guide the discussion relative to addressing referral to smoking cessation	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
I am confident to motivate patients who state they are not interested in smoking cessation	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree

Appendix c

Post Self Assessment

	1	2	3	4	5
I feel confident to address smoking cessation with resistive patients	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
I have experience using a confidence ruler	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
I feel I can convince a resistive patient to participate in a smoking cessation program	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
I am familiar with stages of readiness to change	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
I feel confidence rulers can guide the discussion relative to addressing referral to smoking cessation	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
I am confident to motivate patients who state they are not interested in smoking cessation	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree

Your feedback is valued and appreciated. Please respond to the following questions:

1. What were the positive aspects of this process improvement project?

2. What were the negative aspects of this process improvement project?

3. How did your patients respond to the confidence/importance ruler?

4. Other comments?