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Moving Beyond the Ask: Improving Tobacco Cessation Intervention Delivery in Primary Care

Joan Johnston

UMass College of Nursing

Capstone Chair: Raeann LeBlanc, DNP, AGPCNP-BC

Capstone Committee Member: Gabrielle Abelard, DNP, PMHNP, PMHCNS- BC

Capstone Mentor:

Anita L. Morris, MSN, FNP-BC

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Abstract

Background: Quitting smoking at any time benefits health. Primary care visits provide the opportunity to advise current tobacco users to initiate a quit attempt, explain available quit options and arrange for adequate follow-up care. Purpose: The purposes of this DNP project were to provide a staff development educational activity and introduce a workflow modification intended to extend the effectiveness of a tobacco cessation intervention delivered during an office visit. *Methods*: Medical Assistant staff members responsible for patient recruitment completed a pre-test, viewed an online tobacco educational module and completed a post-test. Using convenience sampling methodology, a cohort of self-identified current tobacco users after being asked if they were contemplating quitting, were recruited, provided consent and became eligible to participate in follow up phone call(s) and an experience survey. Staff members were provided an anonymous staff experience survey. *Results:* 33% of the nine patients who enrolled, consented and participated in follow up telephone call(s) decided on a quit date (but may not have actually quit) by the end of the project period. *Conclusion:* Identifying current smokers who are thinking about quitting, providing information and resources to them and arranging for ongoing support may extend the impact of tobacco cessation activity beyond simply asking about tobacco use during the office visit. This process shows promise as a technique to move interested patients towards selecting a quit date while providing the practice with a method to develop sustainable practice-based interventions that integrate positive health behavior change as one of their components.

Keywords: tobacco cessation, intervention, primary care practice

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Problem Statement

The health benefits of quitting smoking can be realized by any smoker almost immediately after they smoke their last cigarette. Most smokers make several quit attempts before they are successful and only 7% of smokers who attempt to quit without any cessation assistance do succeed (Kruger, O'Halloran, & Rosenthal, 2015). Effective interventions exist to support smokers who want to quit (Ellerbeck et al., 2010), but their delivery in the primary care setting is unpredictable. The increased risk of morbidity and mortality for smokers and suboptimal health status related to their continued tobacco use may be mitigated through consistent delivery in primary care of interventions intended to support patients as they attempt to change their smoking behaviors in the community.

Introduction and Background

Recent studies reveal that smoking is associated with a risk for development of a wider range of diseases than originally thought and a concurrent risk of decreased life expectancy (Carter et al., 2015; Jha et al., 2013). Primary care visits provide the opportunity to advise current tobacco users to quit, initiate a quit attempt, explain available options and arrange for adequate follow-up care. This range of services is not provided consistently in primary care practices for reasons that are varied and include lack of time, lack of skill, and competing clinical demands, among others (Altschuler, Margolius, Bodenheimer, & Grumbach, 2012; Yarnall, Pollak, Ostbye, & Krause, 2003). Delivering an increased number of comprehensive tobacco cessation interventions may be more likely to occur in the primary care setting if the primary care provider (PCP) receives assistance with the intervention delivery process. Expanding the clinical tobacco cessation intervention delivery role to include other staff members in addition to the primary care provider may be a valid strategy to improve the frequency of this health

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promotion activity in primary care, initiate a greater number of quit attempts, with the potential of leading to long term or permanent tobacco abstinence, thereby improving individual and population health.

Review of the Literature

The U.S. Preventive Services Task Force (USPSTF) recommends that clinicians ask all adults about tobacco use and provide tobacco cessation interventions for those who use tobacco products. The USPSTF promotes a counseling framework that is known as the 5As. The steps associated with a 5As-based intervention are: 1) Ask about tobacco use; 2) Advise to quit through clear personalized messages; 3) Assess willingness to quit; 4) Assist to quit; and 5) Arrange follow-up and support (Clinical Practice Guideline Treating Tobacco Use and Dependence Update Panel, 2008). (Appendix A). This Grade A recommendation is based on high certainty that the net benefit is substantial. Interventions that support success include, but are not limited to telephone counseling, and self-help materials.

In identifying research to support tobacco cessation quality improvement interventions in primary care, a search of the literature for the information related to the delivery and effectiveness of tobacco cessation interventions included the following databases: PubMed of the National Library of Medicine and Cumulative Index of Nursing and Allied Health Literature, using the following Medical Subject Headings (MeSH): tobacco cessation, intervention, primary care and effective. Forty-one articles were retrieved from a search of the above databases using the selected MeSH terms. Inclusion criteria consisted of free full-text articles published in the English language for the years 2010-2015. Of this number, eleven were eliminated due to their focus on a subpopulation with pre-existing chronic diseases or targeted medical conditions, twelve took place in locations other than primary care or addressed self-help only, three involved

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an age group other than adults, and three addressed diagnostic indicators of tobacco use. One article was eliminated due to its focus on research needs. Another article was eliminated due to its emphasis on physician training in preparation for, but did not include intervention delivery. Ten articles remained for review. The Johns Hopkins Research Evidence Appraisal scale (Dearholt & Dang, 2012) was used to evaluate the strength and quality of the selected studies. This model's quality rating scale is broadly defined, allowing for, within its structure, application of critical thinking skills and permits integration of users' knowledge and experience.

In their matched group randomized trial with two treatment arms, Vidrine and colleagues (2013) used trained licensed vocational nurses to electronically record the tobacco use status, followed by brief advice to quit. This was supplemented by randomizing patients to either an active or passive referral to a quit line (i.e., the two treatment arms). Results showed that active referrals were significantly more likely to result in treatment enrollment (p=0.0001). Zwar and his colleagues, (2015) also used trained practice nurses (PNs) in their three-arm cluster randomized controlled trial to deliver, along with a recommendation for pharmacotherapy, either a quit line referral, a PN intervention or provision of usual care that included an assessment of willingness to quit and offer advice within the practice, referral to a quit line, or both, but no provision was made to facilitate either. Results revealed that patients who received the PN support were more likely to report longer term smoking abstinence compared to the other two groups (Zwar et al., 2015).

Kunyk, Els, Papadakis and Selby (2014) demonstrated in their convenience sample study that creation of a tobacco clinical system pathway based on existing practice infrastructure that incorporated additional health care team members supported positive and sustainable changes in tobacco use disorder treatment by physicians in primary care. Similarly, Fairhurst (2010)

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discussed the importance of healthcare professionals working together to support patients to stop smoking and the need for training to ensure staff are engaged with the "quit journey".

Bass, Naish, and Buwembo, using an uncontrolled before-and-after design in their study, trained a staff member in each primary care practice to serve as the local leader, known as a change champion, for each primary care study site. Unlike other designs, (Fairhurst, 2010; Vidrine et al., 2013; Zwar et al., 2015) change champion eligibility was not associated with a particular occupational role. This approach resulted in an increase in the number of 5As elements included in the tobacco intervention, with statistically significant improvement in delivering advice to change (p <.001), self-management planning (p <.001), and setting a specific follow-up date (p =02).

The following three studies evaluated primary care provider and staff support for tobacco cessation intervention when delivered by someone other than the primary care provider or a member of the practice staff. Lubetkin, Lu, Krebs, Yeung, and Ostroff's (2010) self-administered survey concluded that more than 80% of physician respondents were amenable to the idea of using community-based patient navigators to conduct post-visit follow up activities, identify patient barriers, help craft problem solutions and motivate smokers to quit. Similarly, these findings correlated with Bittencourt and Scarinci's cross-sectional study (2014) that suggested health care managers and administrators generally supported Community Health Workers (CHWs) identifying smokers in the community, to referring them to appropriate programs, providing one-on-one education, and conducting conduct home visits before and after treatment. Begh et al. (2011), in their pilot cluster randomized control trial, found that 32% more quit attempts were initiated in the intervention population (N=341) in the geographical area where

community-based workers delivered a tobacco intervention than in the control areas where no community-based intervention was delivered.

Robson (2014) reported that nicotine replacement therapy was an effective intervention for tobacco cessation, increasing the chances of a successful quit attempt by as much as 50-70% (Robson, 2014) in his four article literature review conducted in 2010. Abrams, Graham, Levy, Mabry & Orleans (2010) determined that while evidence-based interventions, including nicotine replacement, are effective in supporting tobacco cessation, only 36% of covered smokers and 60% of their physicians knew about these insurance coverage that may provide access to this and other cessation benefits.

On-going tobacco use is potentially enabled by the lack of successful tobacco cessation interventions delivered within the primary care setting. More than half of U.S. smokers have a primary care visit each year potentially providing an opportunity for smokers to receive tobacco cessation information and support (Boyle, Solberg & Fiore, 2010). Patients are more likely to initiate a quit attempt when it is suggested within the context of a primary care visit (Bass et al., 2013).

Theoretical Framework

Pender's Health Promotion Model (HPM) combines the perspectives of behavioral science to explain health behaviors (Pender & Pender, 1996). This model helps to identify the influences of biopsychosocial elements that may help engage patients in behavior changes intended to improve their health status in the absence of related disease. By far, the most common health behavior change goal articulated by the use of the HPM as a predictor of health promotion lifestyle behaviors is exercise (Edmonds, 2010). Others include nutrition and stress

management (Lucas, Orshan, & Cook, 2000); Padula and Sullivan, 2006). The health promoting behavior of interest was tobacco cessation.

The HPM attempts to address the gap between actual (current smoker) and ideal (nonsmoker) behaviors. The HPM is about enhancing and optimizing, not curing; this perspective allows the model to be applied to a wide range of situations. When using the HPM, an individual definition of the current condition is compared to what is envisioned as achievable in terms of improvement. If the anticipated benefit is determined to be achievable, acceptable, sufficiently important, and feasible, then it is possible that the behavior will be initiated, unless obstacles (real or imagined) hinder or prevent initiation (Pender & Pender, 1996) (Appendix B).

The HPM acknowledges the uniqueness of each individual and what potential impact this individuality has on health promotion lifestyle behaviors being contemplated. Consideration of these influences includes both modifiable and non-modifiable factors, including but not limited to environment, relationships, and perceptions (Pender & Pender, 1996). Once a person is aware of what their own Health Promoting Lifestyle Behavior (HPLB) factors are and how they interact, they may be more able to recognize them as they occur and leverage their impact (Kim, Choi-Kwon, Kim, Park, & Koh, 2015).

The HPM supports delivery of a tobacco cessation intervention that aligns with the 5As framework. Asking about tobacco use identifies current behavior. Advising a user to quit tobacco by delivering a clear and personalized message serves as acknowledgment of the biological, psychological and socio-cultural elements associated with the user. Assessing willingness to quit integrates behavior-specific cognitions and affects including, but not limited to, perceived benefits, barriers and assessment of self-efficacy. Current situational influences for an individual initiating a quit attempt may be integrated within the context of the shared decision making

discussion during which the patient considers available treatment options that are associated with a quit attempt. Finally, arranging for follow-up and support occurs when the commitment to the plan of action is made and the patient receives ongoing guidance as challenges associated with continuing the quit attempt are encountered. This model informs the intervention from a health improvement, not disease avoidance, perspective.

Project Design

This DNP Project/Quality Improvement (QI) pilot utilized a convenience sample, one group pre-post intervention design. A staff assessment of knowledge about the 5As framework, Pender's Health Promotion Model, and the health benefits of quitting tobacco use were assessed before and after viewing online educational modules designed to increase their understanding of the DNP Project intervention and promote its application to practice (Appendix C). Assessment of the 5As elements that were delivered during the enrollment office visit was conducted during an initial telephone call. Longitudinal experience-specific assessment of resource utilization (accessing/use of websites or telephone based support, in-person support, over-the-counter nicotine replacement products or prescription medications, smartphone applications), current tobacco use status and quit date decision status were also evaluated among the patient participants during the initial telephone call following the enrollment office visit. The target goal was for 15% of the patients who received the cessation intervention and follow up telephone call(s) would select a quit date.

Seven percent of smokers who attempt to quit without any cessation assistance do succeed (Kruger et al., 2015) and behavioral treatments increase the likelihood of quitting by 1.3 to 2 times (Abrams, Graham, Levy, Mabry, & Orleans, 2010). The 15% target goal integrated the potential impact of the resource packet contents and follow up telephone calls. Quit date selection functioned as a surrogate for an actual quit attempt and may have been a more realistic commitment for a patient to have made within the DNP Project timeframe.

Project Methods

Additional goals were to provide an educational intervention to increase Medical Assistant knowledge of Pender's Health Promotion Model, the 5As framework and the health benefits of quitting tobacco. Practice-level goals were to develop a sustainable workflow so that patients who expressed interest in quitting tobacco would receive an office visit-initiated cessation intervention that aligned with the 5As framework, be provided a take-home resource folder and receive post-visit telephone support that would maintain the patient's self-expressed interest in quitting tobacco beyond the conclusion of the traditional office encounter. A secondary practice level outcome related to the workflow goal was to create an intervention delivery method that could be applied to other patient conditions for which behavior-based interventions may be effective.

The clinic Medical Assistant staff completed an online pretest that assessed their current knowledge in the areas of the 5As framework, Pender's Health Promotion model and the health benefits of quitting tobacco. After viewing educational materials that provided content in these areas, the clinic staff completed a post test to measure knowledge advancement.

Patients over 18 years of age who arrived for an office visit during the intervention period, reported current tobacco use to the Medical Assistant during the rooming process and expressed an interest in quitting were invited to enroll in the intervention program. Associated elements included providing consent to receive at least one post-visit phone call and a follow up experience survey. Patients were given a packet of educational materials, the contents of which included a self-admininstered test for nicotine dependence, toll-free telephone numbers for quit

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support lines, information about in-person support meetings, OTC tobacco cessation product information and pricing and Massachusetts Department of Public Health tobacco cessation brochures. They are are listed in Appendix D. Also included was a consent form allowing DNP student telephone contact and mail delivery of an experience survey (Appendix E). The DNP student attempted to contact enrolled patients approximately two weeks after the office visit to conduct the initial telephone survey (Appendix F). Calling was discontinued after four unsuccessful attempts and the patient was considered unenrolled after that time. During the initial telephone call, a review of the office- based interventions was conducted, plans to intitate a quit attempt (if any) were reviewed, current tobacco use status was appraised, and verbal permission to conduct a second telephone interview was obtained. Telephone contact continued every two weeks until 1) the patient picked a quit date 2) the patient ended his/her participation/could not be reached or 3) the intervention period concluded. Content of the second and subsequent telephone surveys is contained in Appendix G.

At the conclusion of the DNP Project period, practice staff members involved in the intervention delivery were invited to complete an anonymous survey (Appendix H) designed to evaluate the staff experience. Enrolled patient participants were mailed an anonymous survey related to their individual experience at the conclusion of the intervention period (Appendix I).

Setting and Resources

The practice site of this intervention was an adult internal medicine practice owned by three physician partners located in Massachusetts. In addition to these three internists, additional staff members include a geriatrician (DO), a Physician Assistant (PA), and a Nurse Practitioner (NP). This internal medicine practice has a patient population of approximately 7000. They have seven additional clinical staff (RNs, and MAs). There are seven administrative staff members. Eight-five percent of their patient population is white with most covered by private insurance or Medicare.

Description of the Group, Population, Community

A community, as a unit of individuals with some degree of cultural cohesion, can be the target of a health promotion program and the context in which this program is provided and evaluated (Issel, 2014). In general, a patient population of individuals covered by commercial insurance, at some level is determined by the network of providers who contract with a particular medical insurer. Within this network of providers, members are free to choose a primary care provider PCP. Patients choose providers for specific reasons, but may change providers if they decide that their needs and the service provided are not aligned or did not meet their expectations. This suggests that long standing patients' health "culture" is aligned (or at least not misaligned) with that of their current provider. At baseline, 38% of the practice's patients reported current tobacco use.

Facilitators and Barriers

Within this busy practice, providers are challenged to address health promotion within the context of a focused office visit. Additionally, meeting administrative and regulatory reporting requirements, while necessary, have the potential to distract clinical staff from patient care activities that may improve health. At present, there is no consensus among providers regarding how to support tobacco quit attempts. However, many of the patients have been associated with this practice for most of their adult life and have developed enduring relationships with the individual providers resulting in enhanced credibility, trust and acceptance of any advice given to them. In the past, patients were referred to a payer-sponsored Quit Smoking class that has been discontinued. Currently, there is no organized follow-up or tracking for patients who have been referred to external tobacco cessation resources or who are actively involved in a quit attempt.

Goals, Objectives, and Expected Outcomes

This DNP Project piloted, developed and tested a standard tobacco cessation intervention process, aligned with the 5As framework, consistent with patient values and preferences that provided on-going, post-visit support for patients who expressed interest in quitting and consented to after visit telephone calls and a post-visit survey. By the end of the intervention period, the goal was that 15% percent of enrolled patients would have selected a quit date.

Ethics and Human Subjects Protection

The purpose of this DNP Project was to pilot an advancement of an established clinical program with the intent of enhancing the quality of patient care currently provided (specific to tobacco cessation). The Human Protection Research Office of the University of Massachusetts determined that this project was considered a Quality Assurance/ Quality Improvement (QA/QI) project and therefore did not require submission of a full protocol to the Institutional Review Board (IRB) and provided a letter confirming this exception.

Protected Health Information (PHI) was accessed as needed to distribute the patient experience survey to eligible participants and provided with protection as outlined to participants in the consent form. The following procedures were used to protect the confidentiality of all relevant records. The student kept all Student Project records, including any codes to patient or survey data in a locked file cabinet. Telephone call interview information was labeled with a numeric code. All electronic records containing identifiable information were password protected. Any computer hosting such files had password protection to prevent access by unauthorized users. Only the student had access to the passwords. QI activities are directed toward clinical improvement at the systems level, the implementation of which allow organizations to advance care in their own practices (Lynn et al., 2007). In this particular DNP Project, the goal was to advance clinical intervention service delivery to eligible patients (current smokers) in a manner consistent with methods shown to be effective in supporting tobacco quit attempts. Initiation of the proposed enhanced service intervention was dependent on the level of interest of the eligible patient in participating, and as such, was voluntary.

Asking about tobacco use at every visit is foundational to primary care. Individuals who initially declined to participate may have had additional opportunities to enrollment based on the frequency of office visits during the pilot project period. The resource packet (Appendix D) was provided to any current tobacco users who were contemplating quitting; DNP Project program enrollment was not required.

Results

Selection of a Quit Date

Selection of a quit date by a current smoker demonstrates a patient's evolution from thinking about quitting (contemplation) to commitment to a plan of action that typically occurs prior to actual demonstration of a health promoting behavior (initiating a quit attempt). The main patient- related goal of this DNP Project was for 15% of the enrolled participants to identify a quit date during the DNP Project timeframe. The identified quit date did not have to be within the DNP Project timeframe however; only communicated during this time. The number of patients who completed the enrollment form (N=15) was 60% of the enrollment goal of 25. Ultimately, nine patients who met eligibility criteria and were able to be contacted comprised the DNP Project participant population. Of them, 33% (N=3) who enrolled, consented and took part in the initial and follow up telephone call(s) for which they were eligible identified a quit date (but may not have actually quit) by the end of the project intervention period. Delivery of 25 resource packets yielded a preliminary enrollment of 15 patients, resulting in an enrollment rate of 48%. Of the 45 resource packets supplied to the practice, 25 were delivered to interested patients by the Medical Assistants during rooming for a distribution rate of 56%.

Staff Pre and Post Tests

Four of the seven eligible Medical Assistant staff members completed both the pre and the post tests of the educational module on tobacco cessation for a completion rate of 57.1%. The average pre-test score was 62% and the average post test score 96% with 100% of the staff members who took both tests (N=4) scoring significantly higher on the post- test (p=0.0003) compared to the pre-test. Additionally, 75% (N=3) of the staff members who took both tests were able to list the elements of the 5As framework on the post test.

Initial Telephone Calls –Office Visit Activities

During the 90 day enrollment period, 15 patients completed the enrollment form. This number was 60% of the initial enrollment goal of 25 patients. Of these, one patient was determined to be ineligible because he was currently engaged in a quit attempt and not currently using tobacco. One patient withdrew during the first telephone call before the initial telephone survey was administered. Four of the patients who completed the enrollment form could not be reached after four phone call attempts and subsequently were lost to follow up, resulting in a DNP Project population of nine. During the initial follow up telephone call, 100 % of the eligible enrollees who could be reached by telephone (N=9) recalled being asked about tobacco use during the office visit and 78% recall receiving positive, personalized advice to quit. Subsequent provider discussions about over-the-counter (OTC) and prescription medications

took place during 56% and 44% of the office visits, respectively. No patients reported receiving a prescription for tobacco cessation medication or having a sample medication sample offered or provided to them. Sixty seven percent of enrolled patients (N=6) reported receiving the resource packet. Comments made by patients during the initial telephone call reflected perceived self-efficacy, perceived barriers and interpersonal influences (Appendix J).

Initial Telephone Calls –Post Visit Patient-Initiated Activities & Experience

In the two week period between the enrollment office visit and the first telephone call, 100 % of the enrollees (N=6) who had received the resource packet reported that it had engaged them in moving towards quitting. A "do not recall" response was counted as a "no" with respect to resource packet receipt. With respect to tobacco use, 100% of enrollees contacted (N=9) reported that they were currently using tobacco at the time of the initial telephone call and had not picked a quit date. However, 22% (N=2) reported an intention to make a decision about a quit date within the next two weeks, while 67% (N=6) were unsure about doing this. 11% (N=1) of the enrolled patients reported that they did not intend to decide about quit date in the next two weeks, and thus were ineligible for future telephone calls, leaving a population of eight patients eligible for a second follow up telephone call.

Second Telephone Calls – Patient-Initiated Activities & Experience

Five of the remaining 8 patients (62.5%) were able to be contacted for a second telephone call. In the period between their first and second phone calls, 20% (N=1) of these patients had accessed resources that would assist in a quit attempt, specifically, the Quit for Life® smartphone application from the American Cancer Society from the list provided in the resource packet. Twenty percent (N=1) of the patients contacted for a second phone call had picked a quit date and were not currently using tobacco. Twenty percent (N=1) of the patients contacted for a

second telephone call had picked a quit date but were currently using tobacco. Twenty percent (N=1) reported an intention to make a decision about a quit date within the next two weeks but were still using tobacco. Forty percent (N=2) of the enrollees contacted reported current tobacco use with no intention to decide on a quit date in the next two weeks and therefore became ineligible for additional telephone calls. One patient remained eligible for a third follow up telephone call.

Third Telephone Call – Patient- Initiated Activities & Experience

One patient was contacted for a third telephone call. In the period between the second and third phone calls, this patient had not accessed resources that would assist in a quit attempt. However, this patient had decided on a quit date but was currently using tobacco. Consistent with earlier telephone calls, patient comments during follow up telephone calls (Appendix J) reflected perceived efficacy, perceived barriers and interpersonal influences.

Staff Experience Surveys

Seven staff experience paper surveys (Appendix H) were hand delivered at the conclusion of the 90 day recruitment period (December 1, 2015 through February 29, 2016). Four were returned using the pre-addressed, postage paid envelope, yielding a response rate of 57.1%. Of those who responded, all of them reported that the tobacco education module was informative, that they learned something new about the health benefits of quitting tobacco, and had increased their knowledge of the 5As approach to tobacco cessation compared to before the DNP Project period. These self-reported assessments related to knowledge gains align with staff performance on the pre and post-tests. Seventy five of the respondents (N=3) see this intervention or something similar continuing in the practice. All of the staff members who returned the survey (N=4) thought the patients appreciated this activity. A follow up question

asked for reasons why (if answered yes to the previous question) or why not (if answered no to the previous question) they thought the patients appreciated/did not appreciate this activity. One staff member commented that that "many thought it was a great opportunity and thought it was great that we provided them with resources" and "the ones that actually signed up seemed to appreciate the option for help". Survey respondents cited the fact that "most patients knew we were trying to help" and "the ability to offer help to our patients" as being what they liked most about their participation in this project. Feeling like they were pressuring patients who were not interested and wishing that more patients had taken the offer were mentioned as what responding staff members liked least about their participation.

Patient Experience Surveys

Twelve paper experience surveys were mailed to patient enrollees at the address they provided during their enrollment office visit. These were sent at the end of the 90 day enrollment period (after February 29, 2016), after phone call(s) were completed, after phone call attempts were discontinued, or patients unenrolled, whichever was later. None of the mailings were returned as non-deliverable. Five surveys were returned using the pre-addressed, postage –paid envelope, for a response rate of 41.6%. Demographic information was provided by 80% (N=4) of the respondents; 20% (N=1) left both the age and gender fields blank. Average age of the respondents providing demographic information was 53 (Range 48-58). Respondents providing demographic information was 53 (N=1) male.

Eighty percent (N=4) of the enrollees who returned the survey reported that they had read the contents of the folder received during the office visit and 40% (N=2) had participated in telephone call follow up. Of those respondents who participated in telephone call follow up, 100% (N=2) of them reported that the calls were helpful. Of the five survey respondents, all

reported that increased awareness of available tobacco cessation resources would encourage them to make a future quit attempt if they had not done so already.

Summary

Identifying current smokers who are thinking about quitting, providing information and resources to them and arranging for ongoing support and monitoring may extend the impact of tobacco cessation activity beyond simply asking about tobacco use during the actual office visit. Delivering patient education and resource materials that can be accessed at the patient's convenience and engaging these patients in regularly scheduled telephone-based conversations may keep the idea of quitting more present in the mind of the patient after they leave the office. The availability of a variety of patient supports after the office visit may help patients decide on a quit date and subsequently move towards a quit attempt. In this DNP Project, 33% (N=3) of the patients who enrolled, consented and participated in the initial and follow up telephone calls had picked a quit date, the goal of the DNP Project, (but may not have actually quit) by the end of the DNP Project period. Supplementing office-based tobacco cessation activities with post visit assistance in the form of regularly scheduled telephone calls shows promise in moving patients who are thinking about quitting toward selection of a personally determined quit date.

Patient comments obtained during telephone calls and written on the patient experience survey (Appendix J) align with the elements contained in Pender's Health Promotion Model (HPM), and support the concept that individual characteristics and experiences and behaviorspecific cognitions and affect may either facilitate or prevent individuals from committing to a plan of action. This was evident in patients' comments related to timing of the quit attempt with patients frequently citing personal life factors (individual characteristics and experiences) and situational/interpersonal influences (behavior specific cognitions and affect) and/or immediate

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competing demands over which they had low control as reason(s) for postponing selection of a specific quit date. Some patient comments reflected perceived self-efficacy and prior related behaviors by describing the methods that they had used during previous unsuccessful quit attempts as barriers to action. Interestingly, some patient comments revealed an increased knowledge of their own relationship with tobacco and its use, suggesting new awareness of behaviors that could potentially be substituted for tobacco use.

Conducting outreach telephone call(s) to current smokers who are thinking about quitting has the potential to consume staff time that the practice may not believe is available. Telephone call time was provided to the site at no cost because of its sponsorship of this DNP Project. However, the actual time needed to conduct these telephone calls may not be excessive. The number of enrollees who were receiving telephone calls did not exceed 9 at any time during the DNP Project period. Initial telephone survey administration was completed in ten minutes and follow up survey completion did not exceed 5 minutes. Staff members envision an activity similar to this one being continued at the practice site and, with coordination, it may be possible include telephone tobacco cessation support within the context of other telephone calls (appointment reminders and results reporting) that may already be originating from the practice.

Additional financial support to continue post-visit outreach to interested individuals may be available. At present, the Centers for Medicare & Medicaid Services (CMS) Chronic Care Management service code provides for 20 minutes of care coordination services furnished to Medicare beneficiaries with multiple chronic conditions. While tobacco use disorder is not specifically included on the list of Medicare Chronic conditions, several medical conditions that are included are exacerbated by continued tobacco use, such as asthma, COPD, diabetes and hypertension. Tobacco cessation could be discussed as part of care coordination services for

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eligible individuals leading to continued engagement and support. Additionally, asymptomatic current smokers who meet inclusion criteria for low dose computed tomography screening for lung cancer must receive counseling on the importance of smoking cessation if they are a current smoker and, if appropriate, be provided information about tobacco cessation interventions. These activities may be eligible for reimbursement, a portion of which may be sufficient to defray the expenses associated with resource packet assembly and staff time to conduct follow up telephone calls. Primary care providers enrolled in Accountable Care Organizations (ACOs) will find reimbursement methodologies increasingly aligned with reporting, then performing on a comprehensive set of quality measures, including tobacco use screening and cessation intervention with the intent of improving population health. These requirements may drive initiation of similarly structured outreach protocols as well as their ongoing improvement.

Limitations

This DNP Project had several limitations, the most significant being small sample size. The number of patients who initially enrolled, consented and were eligible to follow up telephone calls (N=12) was below the initial goal of 25 patients. The number of patients who may have been thinking about quitting sufficiently so that they accepted the resource packet but declined to enroll and consent to follow up telephone calls is estimated to be 13 based on the number of folders remaining at the conclusion of the DNP Project period.

An additional limitation was the short DNP Project timeframe. Enrolled patients who articulated a quit date, with one exception, chose a date after the conclusion of the DNP Project. This suggests that making the commitment to a plan of action may involve a time investment on the part of the patient – a factor not anticipated when crafting the intervention timeframe.

The DNP Project intervention, as designed, did not specifically consider an enrollee's history of previous quit attempts. However, it became apparent that several enrollees had unsuccessfully attempted to quit tobacco in the past. These experiences may have influenced their current participation. The impact of patient reported histories was not anticipated during the intervention design, but its acknowledgment and assimilation moving forward has the potential to result in crafting a tobacco cessation intervention that is more patient-centered, meaningful and impactful.

Another limitation was the potential impact of the follow up telephone calls being made by an individual (the DNP student) who was associated with, but not embedded in the primary care practice. As such, the DNP student's relationship was not as developed as those of the practice staff and may have impacted the effectiveness of the intervention. Ongoing follow up and support could have been provided in-person during any additional office visits that took place after the enrollment visit that were within the DNP Project period by the practice staff had the primary care practice assumed responsibility for initiating and managing the follow up activities – including telephone calls to enrollees.

Finally, there was a limitation related to the exclusion of insurance coverage considerations. The Affordable Care Act requires that tobacco cessation must be provided at no cost under most types of health insurance as of January 1, 2014. However, there is no single definition of tobacco cessation meaning the scope of coverage is likely to vary by state, by type of insurance and by the insurance provider. Knowledge of a patient's existing insurance coverage would facilitate design of a customized intervention that could minimize, if not eliminate, a patient's out of pocket costs, and perhaps serve as an additional incentive to act. Coverage

elements were not incorporated into the DNP Project intervention design, resulting in interventions that were somewhat generic and relied heavily on patient-initiated activity.

Conclusion and Future Considerations

The initial patient-related outcome of this DNP Project was for a percentage of enrolled patients to have quit tobacco use during the intervention period. This measure was modified during the DNP project in response to telephone conversations with enrollees that revealed the complexity of establishing a self-determined quit date and acknowledgment that selection of a quit date is required prior to an actual quit attempt. This resulted in a more reasonable expectation given the short (90 day) time frame for the intervention. The adjusted measure was more patient-centered and demonstrated congruence with the commitment to action section of Pender's Health Promotion Model as well as the "assist" step of the 5As treatment model. The expectation that patients who are simply thinking about quitting will be capable of committing to a specific quit date during an office visit may be unrealistic, given the multiple factors - some of which appear to be future time-oriented - that function as inputs to making a quit date selection.

Patients who enrolled and made themselves available for the telephone calls may have been more ready to quit (closer to commitment to a plan of action) and more likely to select a quit date independently, although this was not specifically addressed in any of the assessments or surveys conducted as a part of this DNP Project. Conversely, enrollees who did not make themselves available for telephone contact (i.e. calls directed to voice mail or unreturned messages) after enrollment may have been less ready to pick a quit date during the pilot project period and chose instead to avoid telephone contact. The fact that 100% of enrollees (N= 3) who returned the patient survey and had not participated in the telephone call follow up reported that

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MOVING BEYOND THE ASK

they had not chosen a quit date by the time they returned the anonymous patient experience survey supports this impression.

Another aim of this DNP Project was to enhance Medical Assistant staff knowledge and skill with the intent of sharing the role of intervention delivery with the primary care provider. With scripting, training and supporting workflow algorithms, any staff member may be able to help the primary care provider in advancing this intervention. This has the potential to result in a greater number of standardized tobacco cessation interventions being delivered to interested patients and possibly, an increased number to quit attempts.

Initial phone call surveys revealed that patient/provider conversations about OTC medications took place 56% of the time. This is a function that could be assumed by a person other than the primary provider as long as the provider had made the prior determination that there were no contraindications to OTC tobacco cessation product use. A warm handoff during an office visit to a colleague who had received training and developed advanced knowledge about the OTC products might serve as facilitator in assisting patients who might be more interested in learning about OTC tobacco products and considering their use, but believe that they cannot do this independently.

Shared medical appointments (SMA) that incorporate tobacco cessation into chronic condition self-management may provide an alternative method to deliver tobacco cessation interventions, provide scale, and promote patient engagement and self-efficacy. Patient registries generated by identifying current tobacco users who also have chronic conditions that may be exacerbated by smoking (i.e. diabetes, asthma, COPD, hypertension) could be used to recruit patients to participate in SMAs. The extended duration of these alternative visits allows explanations and demonstration of available technology- based resources (i.e. websites, text to

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quit applications and smartphone applications) beyond which is possible during a standard office visit.

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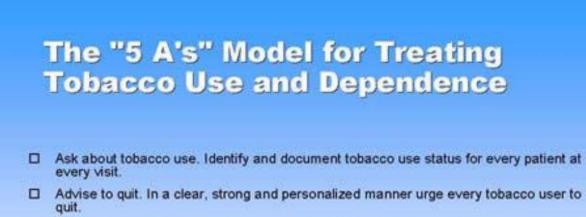
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Appendix A



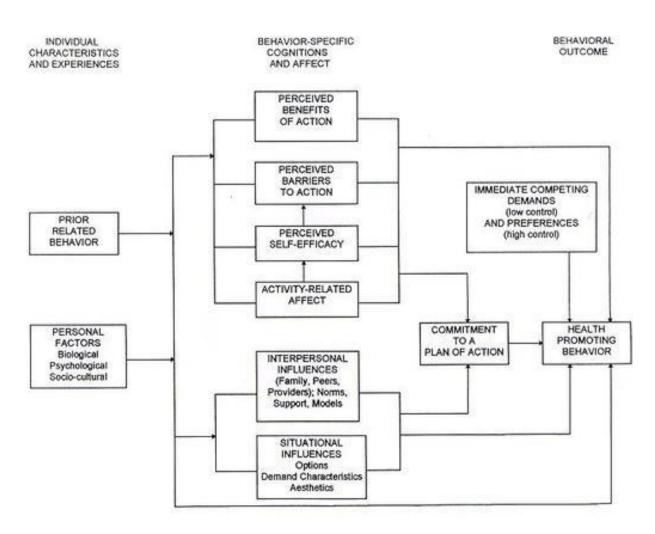
- Assess willingness to make a quit attempt. Is the tobacco user willing to make a quit attempt at this time?
- Assist in quit attempt. For the patient willing to make a quit attempt, offer medication and provide or refer for counseling or additional treatment to help the patient quit. For patients unwilling to quit at the time, provide interventions designed to increase future quit attempts.
- Arrange follow-up. For the patient willing to make a quit attempt, arrange for follow-up contacts, beginning within the first week after the quit date. For patients unwilling to make a quit attempt at the time, address tobacco dependence and willingness to quit at next clinic visit.

http://www.ahrq.gov/professionals/clinicians-providers/guidelines-

recommendations/tobacco/clinicians/presentations/2008update-full/slide59.html

Appendix B

Pender's Health Promotion Model



http://nursingtheories.weebly.com/nola-pender.html

Appendix C

Pre and Post Test

Last name

- 1. Today's date
- 2. First name
- 3. Email address
- 4. Name the steps of the 5As tobacco cessation intervention process.
- 5. The model that is being used for this intervention is: (Choose one.)
 - a. Disease Avoidance Model
 - b. Harm Reduction Model
 - c. Health Promotion Model
 - d. Health Belief Model
- 6. What is the average weight gain for those who quit smoking? (Choose one.)
 - a. Less than 10 pounds
 - b. 10-15 pounds
 - c. 15-30 pounds
 - d. More than 30 pounds
- 7. Which symptom is most likely to be associated with smoking cessation? (Choose one.)
 - a. Blurred vision
 - b. Dry mouth
 - c. Anxiety
 - d. Stomach pain
- 8. What situations might make it even more difficult for your patient to quit smoking?
 - a. Patient has first cigarette of day within waking up
 - b. Patient has elevated depressive symptoms
 - c. Patient has experienced a recent major life change
 - d. Patient lives with other smokers in the household
 - e. All of the above
- 9. How does quitting smoking, on average, affect life expectancy?
 - a. There is no change in life expectancy
 - b. On average, a gain of 6 years of life
 - c. Life expectancy increases only if the patient was a light smoker
- 10. Which of the following benefits may be expected if a patient quits smoking before elective surgery?
 - a. Fewer lung, heard and infectious complications
 - b. Better bone fusion after fracture and improved wound healing
 - c. Less likely to be admitted to an intensive care unit
 - d. Shorter length of stay in the hospital
 - e. All of the above
- 11. Some patients are too old and have smoked too long to get any health benefit
 - a. True b. False
- 12. Tobacco dependence is a chronic disease that requires multiple attempts to quit.
 - a. True b. False
- 13. In 5 minutes or less during an office visit, you can increase the odds that your patient will quit.a. Trueb. False

Appendix D

Resource Packet Contents

LEARN ABOUT YOUR SMOKING				
Take the Quiz included in the packet or if you prefer, access the online version here: http://www.nova.edu/gsc/nicotine_risk.html				
CREATE YOUR OWN QUIT PLAN				
http://smokefree.gov/quit-plan				
IN PERSON QUIT ASSISTANCE & SUPPORT				
Start to Stop® http://www.cvs.com/minuteclinic/resources/sm Nicotine Anonymous – Find a Meeting	oking-cessation			
https://nicotine-anonymous.org/find-a-meeting	.html			
PHONE SUPPORT				
Quit for Life®	Nicotine Anonymous 1-877-TRY-NICA (1-877-879-6422)			
Get live phone support from trained representatives. Operated by the American Cancer Society [®] Quit for Life [®] Program, the quit hotline is available in English and Spanish and can connect you with resources and	1-800-QUIT-NOW (1-800-784-8669)			

support in your area. Call 1-844-265-4321.

TECHNOLOGY-BASED SUPPORT						
Quit for Life [®] (web-based) https://www.quitnow.net/F / QUIT START App http://smokefree.gov/apps		QUIT NET	E TXT xefree.gov/smokefreetxt net.meyouhealth.com/#/			
OVER THE COUNTER PROD	OVER THE COUNTER PRODUCTS					
GUM	LOZENGE PATCH					
Nicotine Gum 2 mg Fruit-coated 50 cents per piece	Nicotine 2 mg Mint lozenge 50 cents per piece		Step 1 Patch 21 mg \$ 2.71 for 24 hours			
Nicotine Gum 4 mg Fruit-coated 50 cents per piece	Nicotine 4 mg Mint lozenge 50 cents per piece		Step 1 Patch 14 mg \$ 2.71 for 24 hours			
			Step 1 Patch 7 mg \$ 2.71 for 24 hours			

Fagerstrom Test for Nicotine Dependence

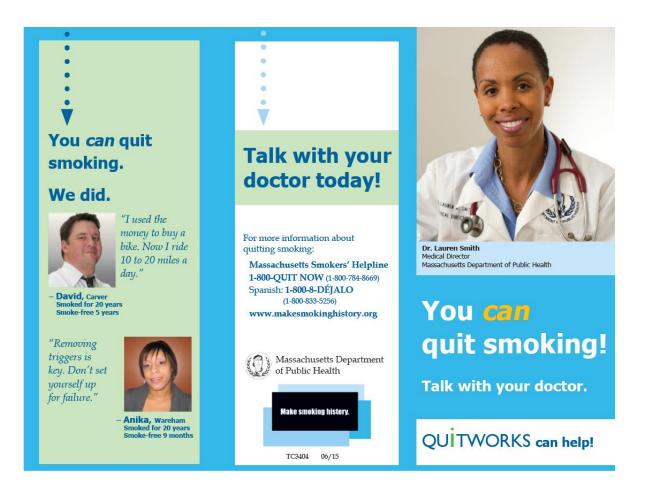
Please tick (\checkmark) one box for each question				
How soon after waking do you smoke your first		Within 5 minutes	3	
cigarette?	iking do you shroke your hist	5-30 minutes	2	
cigarette:		31-60 minutes		
Do you find it diffic	cult to refrain from smoking in places	Yes	1	
where it is forbidd	en? e.g. Church, Library, etc.	No	0	
Which cigaratta w	auld you hata ta giya un?	The first in the morning	1	
which cigarette we	ould you hate to give up?	Any other	0	
		10 or less	0	
How many sigarat	tos a day da yau smaka?	11 – 20	1	
now many cigaret	tes a day do you smoke?	21 – 30	2	
		31 or more	3	
Do vou cmoko mo	e frequently in the morning?	Yes	1	
Do you shloke hior	e frequently in the morning?	No	0	
Do you smoke eve	n if you are sick in bed most of the	Yes	1	
day?		No	0	
		Total Score		
SCORE	1-2 = low dependence	5 - 7= moderate dependence		
SCORE	3-4 = low to mod dependence	8 + = high dependence		

Brochures from Massachusetts Department of Public Health

http://massclearinghouse.ehs.state.ma.us/TOB/TC2410kit.html - Want to Quit Smoking? You Can!



<u>http://massclearinghouse.ehs.state.ma.us/product/TC3404kit.html</u> - Thinking About Quitting? QUITWORKS Can Help!



G4 1

Appendix E

Consent Form for Participation in a Quality Improvement Student Project University of Massachusetts Amherst – College of Nursing

Student:	
Student Project Title:	Moving Beyond the Ask: Improving Tobacco Cessation
	Intervention Delivery in Primary Care

This form is called a Consent Form. It will give you information about this Student Project so you can make an informed decision about participation in this activity.

You have been invited to participate in these follow up surveys because you:

- Identified yourself as a current tobacco user
- Expressed interest in quitting
- You are at least 18 years old

Name: Address: Telephone Number:

We are conducting this Quality Improvement Student Project to provide resources that may assist patients who want to quit smoking.

This Quality Improvement Student Project intervention (providing tobacco cessation resources and advice to quit) will take place at ______ from November 2015 through February 2016.

WHAT WILL I BE ASKED TO DO?

There are two parts to this Quality Improvement Student Project.

If you agree to take part:

Step One:

You will be asked to participate in an Initial Telephone Survey that will take no more than 10 minutes. Depending on your responses, you may be contacted by phone for additional follow up surveys. (You may decline to answer any question and you may decide to drop out anytime.)

Step Two:

After February 28, 2016, you will be sent a survey questionnaire in the mail to fill out and return to the student in a postage paid envelope. (You may skip any question you feel uncomfortable answering or decide not to complete the questionnaire.)

What are my benefits of being in this Student Project?

We are hopeful that project participants will make an attempt to quit tobacco use.

What are my risks of being in this student project?

We believe there are no known risks associated with this Quality Improvement Student Project; however, a possible inconvenience may be the time it takes to participate in the phone interview and complete the survey questionnaire.

How will my personal information be protected?

The following procedures will be used to protect the confidentiality of your records. The student will keep all Student Project records, including any codes to your data, in a locked file cabinet. Quality Improvement records will be labeled with a code. A master key that links names and codes will be maintained in a separate and secure location. The master key will be destroyed 3 years after the close of the Student Project. All electronic records containing identifiable information will be password protected. Any computer hosting such files will also have password protection to prevent access by unauthorized users. Only the student will have access to the passwords. At the conclusion of this Student Project, the student may publish or present her findings. Information will be presented in summary format and you will not be identified in any publications or presentations.

What if I have questions?

I will be happy to answer any question you have about this Student Project. If you have further questions about this project or if you have an activity-related problem, you may contact me at XXX-XXX-XXXX or via email at ______

SUBJECT STATEMENT OF VOLUNTARY CONSENT

When signing this form I am agreeing to voluntarily enter this Student Project. I have had a chance to read this consent form, and it was explained to me in a language which I use and understand. I have had the opportunity to ask questions and have received satisfactory answers. I understand that I can withdraw at any time. A copy of this signed Informed Consent Form has been given to me.

YES. I consent and agree that ______ working with _____ may contact me by telephone to interview me about my participation in the Tobacco Cessation Study. I agree that she can leave her name and a call back number if I do not answer.

Participant Signature:

Print Name:

Date:

Appendix F

INITIAL TELEPHONE CALL SURVEY QUESTIONS

1. During that visit, were you				
a. Asked about your tobacco use?	YES YES	NO NO	Don't Don't	
b. Received positive, personalized advice to quit?	IES	NU	Dont	recall
2. Did you receive a handout with information about resources	-		-	
	YES	NO	Don't	recall
3. Did you discuss Over the Counter products for tobacco cessat	tion with y	your pro	vider?	
	YES	NÖ	Don't	recall
4. Did you discuss prescription medication for tobacco cessation	n with yoı YES	ur prović NO	ler? Don't	rocall
5. Were you given a sample of prescription medication for toba			Dont	lecall
	YES	NO	Don't	recall
6 Ware you given a prescription for tobacco constion modicati	on from u	ourpro	ridar?	
6. Were you given a prescription for tobacco cessation medicati		-		
	YES	NO	Don't	recall
7. Did you access any other resources that would assist in a qui	t attempt	? (Text to	o quit, on	line
course, other).			YES	NO
If you which appa?			100	110
If yes, which ones?'				
Paper or online quiz				
Smokefree.gov				
Start to Stop				
Nicotine Anonymous				
1-800-Try-To-Stop				
Smokers' Helpline				
Quit Tips available 24 hours a day in English and Spanish (1-800-9-GET-A-TIP)				
Quit for Life				
1-800-Quit Now				
Quit Start App				
Smoke Free Text				
Quit Net				
Looked at OTC products at store				

MOVING BEYOND THE ASK

8.	Did receiving the resource packet engage you in moving toward quitting?	YES	NO
9.	Did you pick a quit date? a. If yes, when? (End of phone calls)	YES	NO
	b. If no,		
	 i. Do you anticipate picking a quit date in the next 2 weeks? 1. No (end of phone calls) 2. Yes, ask for permission to call again after (today + 14 date in the next 2 weeks? a. Permission i. Yes ii. No (end of phone call follow up) 3. Unsure, ask for permission to call again after (today + 14 date in the next 2 weeks? ii. No (end of phone call follow up) 3. Unsure, ask for permission to call again after (today + 1 a. Permission i. Yes ii. No (end of phone call follow up) 		

- 10. What is your tobacco use status today?
 - a. Have used tobacco already today
 - **b.** Have not used tobacco yet today

Appendix G

FOLLOW UP TELEPHONE CALL SURVEY QUESTIONS

1. Did you access any other resources that would **assist** in a quit attempt? (Text to quit, online course, other).

YES NO

If yes, which ones?'		
Paper or online quiz	Smokers' Helpline	Quit Start App
Smokefree.gov	Quit Tips available 24 hours a day in English and Spanish (1-	Smoke Free Text
Start to Stop	800-9-GET-A-TIP) Quit for Life	Quit Net
Nicotine Anonymous	1-800-Ouit Now	Looked at OTC products at
1-800-Try-To-Stop		store

2. Did you pick a quit date?

- a. If yes, when? (End of phone calls)
- b. If no,
 - i. Do you anticipate picking a quit date in the next 2 weeks?
 - 1. No (end of phone calls)
 - 2. Yes, ask for permission to call again after (today + 14 days)
 - a. Permission
 - i. Yes
 - ii. No (end of phone call follow up)
 - 3. Unsure, ask for permission to call again after (today + 14 days)
 - a. Permission
 - i. Yes
 - ii. No (end of phone call follow up)
- 3. What is your tobacco use status today?
 - a. Have used tobacco already today
 - **b.** Have not used tobacco yet today

YES NO

Appendix H

Patient Survey

Dear Practice Patient,

_ •

Thank you for enrolling in the recent Tobacco Cessation Quality Improvement Project sponsored by

Please complete this short **anonymous** survey so we can learn more about your experience. You can return it using the postage-paid envelope provided.

If y	you have	any c	uestions,	nlease ca	ll me at	or email	me at
\mathbf{H}	you nave	any c	juestions,	piease ca	II IIIC at	or eman	me at

Thank you.

Your Age:

Your Gender:

1. Did you ever read the contents of the blue folder that you got during your office	visit? YES	NO
2. Did you participate in any phone calls?	YES	NO
a. If YES, were the phone calls helpful?	YES	NO
3. Did you or have you chosen a quit date?	YES	NO
4. Would your increased awareness of tobacco cessation resources available to you encourage you to make a quit attempt in the future if you have not already?	YES	NO

Appendix I

Dear Practice Staff Member: Thank you for participating in the recent Tobacco Cessation Intervention Delivery Quality Improvement project at . It could not have taken place without your contribution. Please take a few moments to complete this anonymous survey so you can communicate your opinions about the experience and offer suggestions to improve it. Please return it in the postage-paid envelope provided. Thank you for your time. If you have any questions or concerns, please call me at XXX-XXX-XXX or email me at xxxxxxx@xxx.xom Was the Tobacco Education Module informative? YES NO Did you learn anything new about the health benefits of quitting tobacco? YES NO Do you know more about the 5As than you did before this QI project started? YES NO Do you see this tobacco cessation intervention or YES NO something similar continuing at this practice? Do you think the patients appreciated this activity? YES NO Why or why not?

What did you like most about your participation? Like least?

Appendix J

Patient Comments

'Learned about how I use tobacco.'

'Cannot quit because I am in Florida.'

Have used the patch in the past.

'My mother has been very sick. Once I get her settled, I might think more about quitting.' This has been a very busy time for me.'

Initial Telephone Call

Hypnosis. I have tried 50 times. I just need to pick a date and quit. The doctor has told me to quit for 30 years.

Smoke because I am bored. Need someone positive to help me with quitting.

Am going to tobacco counseling now. Expect to obtain OTC products in the future. Using e cigarette now. Am scheduled for heart surgery. Am cutting down and will have nicotine level measured in two weeks.

On vacation. Will quit after that.

Follow Up Telephone Calls

'Talk about it and think about it a lot.' 'I am also trying to lose weight.' 'I have only had 2 as of 9:45 AM.'

Obtained patch, but used one day only. Gave up coffee. Obtained e-cigarette and am using occasionally.

I know that the first step is picking a quit date. I have to get to it.

I read the contents of the folder but did not access any of the resources.

Am considering hypnosis. Feel amount of smoking is related to mood. Using treadmill. Cutting down but not the right time for me to quit.

Written on Patient Survey

Have tried Chantix twice, acupuncture once, hypnosis twice and nicotine gum once. Sorry, thought I was ready.

Phone calls very helpful. The app from the American Cancer Society help a great deal. 50 days quit. (Picture of healthy heart and smiley face.) I have saved 500.00 not smoking.