Published in final edited form as:

Res Social Adm Pharm. 2013 ; 9(1): 27–36. doi:10.1016/j.sapharm.2012.03.001.

A Randomized Trial Evaluating Two Approaches for Promoting Pharmacy-Based Referrals to the Tobacco Quitline: Methods and Baseline Findings

Alan J. Zillich, PharmD^{1,2}, Robin L. Corelli, PharmD³, Susan M. Zbikowski, PhD⁴, L. Brooke Magnusson, MA⁴, Christine M. Fenlon, BFA¹, Alexander V. Prokhorov, MD, PhD⁵, Carl de Moor, PhD¹, and Karen S. Hudmon, DrPH^{1,3}

¹Department of Pharmacy Practice, Purdue University College of Pharmacy

²Roudebush VA Medical Center, Health Service Research and Development

³Department of Clinical Pharmacy, University of California San Francisco

⁴Alere Wellbeing

⁵The University of Texas MD Anderson Cancer Center

Abstract

Background—Historically, community pharmacies have not integrated tobacco cessation activities into routine practice, instead unbundling them as unique services. This approach might have limited success and viability.

Objective—The objective of this report is to describe the methods and baseline findings for a two-state, randomized trial evaluating two intervention approaches for increasing pharmacy-based referrals to their state's tobacco quitline.

Methods—Participating community pharmacies in Connecticut (n=32) and Washington (n=32) were randomized to receive either (a) on-site education with an academic detailer, describing methods for implementing brief interventions with patients and providing referrals to the tobacco quitline, or (b) quitline materials delivered by mail. Both interventions advocated for pharmacy personnel to ask about tobacco use, advise patients who smoke to quit, and refer patients to the tobacco quitline for additional assistance with quitting. Study outcome measures include the number of quitline registrants who are referred by pharmacies (before and during the intervention period), the number of quitline materials distributed to patients, and self-reported behavior of cessation counseling and quitline referrals, assessed using written surveys completed by pharmacy personnel (pharmacists, technicians).

Results—Pharmacists (n=124) and pharmacy technicians (n=127), representing 64 participating pharmacies with equal numbers of retail chain and independently-owned pharmacies, participated in the study. Most pharmacists (67%) and half of pharmacy technicians (50%) indicated that they were “not at all” familiar with the tobacco quitline. During the baseline (pre-intervention)

© 2012 Elsevier Inc. All rights reserved.

Address for correspondence: Karen S. Hudmon, DrPH, Department of Pharmacy Practice, Purdue University College of Pharmacy, Office: (317) 613-2315 ext 311, Facsimile: (317) 613-2316, khudmon@purdue.edu.

Publisher's Disclaimer: This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

monitoring period, the quitline registered 120 patients (18 in CT and 102 in WA) who reported that they heard about the quitline from a pharmacy.

Conclusion—Novel tobacco intervention approaches are needed to capitalize on the community pharmacy's frequent interface with tobacco users, and these approaches need to be evaluated to estimate their effectiveness. Widespread implementation of brief, yet feasible, pharmacy-based tobacco cessation efforts that generate referrals to a tobacco quitline could have a substantial impact on the prevalence of tobacco use.

Keywords

Tobacco; tobacco cessation; smoking; smoking cessation; pharmacist; community pharmacy; quitline; brief intervention

INTRODUCTION

The U.S. Public Health Service *Clinical Practice Guideline for Treating Tobacco Use and Dependence* delineates a five-component model (the 5 A's) for clinician-delivered tobacco cessation interventions: (a) *Ask* about tobacco use, (b) *Advise* tobacco users to quit, (c) *Assess* readiness to quit, (d) *Assist* with quitting, and (e) *Arrange* follow-up counseling.¹ This method has been shown to be effective, but the time and tobacco cessation expertise required for full-scale implementation is often a barrier. Therefore, an abbreviated method ("Ask-Advise-Refer") of asking about tobacco use, advising patients to quit, and referring patients to other programs or resources (such as a tobacco quitline) for additional assistance is recommended when time and/or expertise is limited.¹⁻³ This method divides the 5 A's into two parts – the clinician initiates the process, and through a referral to the quitline, the patient receives comprehensive cessation assistance that includes follow-up counseling.

In some clinical settings, pharmacists have successfully delivered tobacco cessation interventions,^{4,5} but research indicates that while community pharmacists express high levels of interest in providing tobacco cessation counseling, they are limited by time constraints.⁶⁻¹⁴ As such, and because community pharmacies are widely accessible and are the primary source for prescription and non-prescription medications for smoking cessation, they might serve as an ideal venue for generating referrals to the tobacco quitline using the *Ask-Advise-Refer* method.¹⁵⁻¹⁸

Tobacco quitline services that provide individualized tobacco cessation counseling have proliferated over the past decade, providing cessation assistance to all potential quitters, including patients who might otherwise have limited access to medical treatment because of geographic location, lack of transportation, or lack of insurance or financial resources. In clinical trials, tobacco quitline services have been shown to be effective in promoting quitting among the patients who use them.^{1,19-22} A Cochrane review shows a pooled odds ratio of 1.56 (95% CI of 1.38, 1.77) for quitline counseling, compared to less intensive interventions.²¹

It has been suggested that academic detailing is an avenue worthy of exploration as a method for advancing clinicians' awareness of tobacco quitlines,²³ and the *Ask-Advise-Refer* method has been described as promising and potentially feasible for routine implementation in community pharmacies.^{11,15,17,18,24} "Academic detailing," or University-based educational outreach, involves having a health professional (typically a pharmacist or other representative) visit clinicians in their practice settings to discuss therapeutic issues in an effort to influence prescribing practices or other clinical decision-making.²⁵ For decades, the pharmaceutical industry has effectively applied a drug detailing approach to promote the use of therapeutic agents,²⁶⁻²⁸ and in a meta-analytic review it was determined that these

types of detailing efforts effectively alter the prescribing practices of physicians.²⁹ Although less commonly used in pharmacies or for enhancing clinicians' skills for assisting patients with adopting healthy behaviors, a few studies have examined academic detailing strategies for promoting tobacco cessation,^{30–33} and one study determined that an academic detailing intervention was an effective approach for disseminating tobacco cessation interventions to physicians in community-based practice.³²

This report describes the study design and methodology for “*Ask-Advise-Refer: Promoting Pharmacy-based Referrals to the Tobacco Quitline*,” a randomized trial funded by the National Cancer Institute. The study aims to estimate and compare the effectiveness of two interventions (academic detailing and mailed materials) for engaging community pharmacy personnel (pharmacists and pharmacy technicians) in applying the *Ask-Advise-Refer* method to generate referrals to the tobacco quitline. Additionally, we describe (a) results of our recruitment effort for achieving a target sample size of 64 pharmacies, (b) pharmacy personnel who consented to participate in the study, and (c) baseline data characterizing the current status of pharmacy's role in referring patients to the tobacco quitline.

METHODS

Study Design

Community pharmacies in Connecticut (CT; n=32) and Washington (WA; n=32) served as the study sites for this randomized trial comparing an academic detailing intervention with a mail-based intervention to engage community pharmacy personnel in generating patient referrals to the tobacco quitline. CT and WA were selected because they are geographically disparate, offer rural, suburban, and urban locations, and their state quitlines are both serviced by Alere Wellbeing (formerly Free & Clear, Inc.), a partner in this research initiative. In 2011, Alere Wellbeing provided quitline services to 25 states and 2 US territories.

To identify eligible pharmacies, a current listing of licensed pharmacies was obtained from the Connecticut and Washington State Boards of Pharmacy. The listing was screened to exclude pharmacies that were not community-based (e.g., hospital, mail order, or clinic-based pharmacies), yielding 593 potentially eligible pharmacies in CT and 1,085 potentially eligible pharmacies in WA. This remaining sample was stratified by pharmacy type (retail chain or independent), and their corresponding zip codes were linked to year 2000 census tract data to create sampling strata based on racial/ethnic composition. A random sample of pharmacies, stratified by pharmacy type, was then generated for recruitment. Using a two-stage random selection process, zip codes were selected at random from within each racial/ethnic category, and one pharmacy within each zip code was selected at random. If no pharmacies located within the zip code chose to participate, an alternative zip code was randomly selected as a replacement. This process continued until all recruitment race/ethnicity categories were saturated. In total, 64 community pharmacies were enrolled (32 retail chain and 32 independently-owned; 16 of each in each state).

After a decision to participate was made by the pharmacy owner or pharmacy manager, consent forms were obtained from participants (pharmacists, technicians), and pharmacies were randomized to one of the two intervention arms (Figure 1). Monitoring of pharmacy-based referrals to the quitline from both states occurred for a period of approximately 5 months prior to launch of the intervention (163 days; May 13, 2009 – October 22, 2009) and continued for 12 months post-intervention. Written surveys were distributed to participating pharmacists and pharmacy technicians at baseline, 3 months, and 6 months. No surveys were administered at the end of the quitline monitoring period, thereby enabling monitoring of incoming calls in the absence of potential confounding effects associated with the

administration of the study surveys. On-site visits by study staff occurred at: (a) baseline, for preliminary introductions and to distribute baseline surveys, (b) 3 months, to conduct counts of remaining quitline materials and distribute 3-month surveys, and (c) 6 months, to conduct counts of remaining quitline materials and distribute 6-month surveys. All study procedures were approved by Purdue University Human Research Protection Program.

The two intervention arms (summarized in Table 1, and described below) represent two approaches that tobacco quitline representatives believed to be viable strategies for broad-scale dissemination in the future, if deemed effective. Both interventions advocated for implementation of the *Ask-Advise-Refer* strategy. The study was designed to emulate the “real world” as much as possible, in that the interventions were purposefully implemented to minimize investigator impact on the intervention effects. As such, with the exception of responding to requests for additional quitline materials, the study team communicated with the pharmacies only during survey data collection and two brief on-site visits for quitline card and brochure counts.

Intervention Components

Quitline materials—Existing quitline materials, already deployed by the Connecticut and Washington quitlines, were used and new pharmacy-specific materials were developed by study team members with expertise in tobacco cessation and quitline marketing. The goal was to create a packaged, cohesive, branded set of materials specific to each state’s quitline. All materials were reviewed by state quitline representatives for acceptability. Additionally, materials intended for distribution to patients (quitline cards and brochures) were printed with a pharmacy-specific ID number to enable linking of quitline calls with the individual pharmacies.

Academic detailing—Academic detailing interventions, implemented in 32 pharmacies (16 in Connecticut and 16 in Washington), were provided on-site by a pharmacist with a doctor of pharmacy degree and hospital and community pharmacy practice experience. One detailer visited all 32 pharmacies; his training involved a self-study review of the core principles of academic detailing, discussions with the research team about potential barriers and facilitators of provider engagement, individualized discussion with an academic detailing expert, and pilot-testing of the intervention protocol in four community pharmacies in Indiana (two retail chain and two independently-owned pharmacies) while observed by two of the study investigators.

The detailing intervention protocol (Table 2) was developed with input from a group of consultants with collective expertise in patient-provider communication, cultural competency, patient counseling for tobacco cessation, and community pharmacy practice. The protocol was designed to balance the extent of content with time constraints of the pharmacy staff. Two weeks in advance, the detailer personally contacted the “primary contact” for each pharmacy to coordinate the date and time for visit. When on-site, the detailer introduced himself, described the purpose of the visit, and used open-ended questions to assess current cessation activities, determine knowledge of quitlines, and identify barriers and/or facilitators to cessation-related activities. Videos (see description, below) were used to demonstrate the *Ask-Advise-Refer* model for tobacco cessation. Following the video, the detailer and the participant discussed methods for integrating *Ask-Advise-Refer* into routine practice. The other intervention materials (Table 1) were selectively introduced, at the detailer’s discretion, to facilitate incorporation of *Ask-Advise-Refer* into routine pharmacy practice. The detailer concluded the session by answering questions and offering to assist with placement of the materials in the pharmacy.

Video vignettes—Four video counseling demonstrations were created for use during academic detailing: two for pharmacists and two for pharmacy technicians. The videos (available from the authors) contain a visual enactment of the *Ask-Advise-Refer* model in a community pharmacy setting and are shown to the participant to role model the desired counseling behavior. The first two videos (one for pharmacists and one for pharmacy technicians) depict a patient who is not ready to quit and receives a “passive” quitline referral, whereby the pharmacist or pharmacy technician provides the patient with a quitline card (similar to a business card, including the quitline telephone number and hours of operation). The other two videos (one for pharmacists and one for pharmacy technicians) depict a patient who is ready to quit and would receive an “active” fax referral to a quitline whereby the pharmacist completes the quitline referral form on behalf of the patient. Because each DVD video is brief (1–2 minutes), these were carefully designed to maximize the counseling effects with patients while also providing an inherent message to pharmacy personnel that this approach to brief counseling is something that is possible to achieve even in the busiest of pharmacies.

Study Outcomes and Measures

Figure 1 provides a diagrammatic display of the design and measurement components of the study. The primary study outcomes include: (a) between-group comparisons of the total number of quitline registrants referred from the 64 study pharmacies during the intervention period, and (b) changes in the number of quitline registrants referred from all pharmacies in CT and WA during the baseline monitoring period versus the intervention period. A registrant is defined as a person who calls the quitline and completes an initial assessment via a series of intake questions. Quitline referral data were captured in two ways: (a) calls received from patients who patronize study pharmacies, and (b) fax-referral forms originating from study pharmacies. To capture incoming call data, specific questions were integrated into the quitline’s patient call (intake) tracking software. These questions prompted the patient to specify if they heard about the quitline from a pharmacy; if “yes,” additional questions were asked to ascertain the identity of the referring pharmacy.

Secondary outcomes include: (a) the number of quitline cards and brochures distributed to patients (assessed via on-site card and brochure counts by study personnel at 3 and 6 months) and (b) changes in self-reported cessation counseling and referral behavior (measured via written surveys completed by participating pharmacists and pharmacy technicians at baseline, 3 months, and 6 months). Surveys also characterized sociodemographic and practice characteristics (baseline only), past-month tobacco cessation activities related to the 5 A’s model the *Clinical Practice Guideline*,¹ patient referrals to quitlines, perceived barriers to tobacco cessation counseling, and pros/cons and self-efficacy for tobacco cessation counseling. An additional survey, completed by a pharmacy manager (the “primary contact”), characterized the participating pharmacies on factors such as availability of smoking cessation medications, location of these medications within the store, number of pharmacist and technician hours worked, number and location of intervention materials posted within the pharmacy (assessed at 3 and 6 months), and availability of smoking cessation and other clinical services.

Baseline surveys were distributed to the stores by study staff during an initial visit that occurred after a commitment to participate. The 3- and 6-month surveys were distributed and tracked by registered mail. All mailed surveys were sent directly to each participant. Up to three contacts were made by telephone to non-responders, and replacement surveys were mailed or faxed upon request. Participants were compensated \$20 for the baseline survey, \$20 for the 3-month survey, \$40 for the 6-month survey, and \$10 for the pharmacy characteristics survey. For participants who were unable to accept incentives because of

corporate policies, equivalent donations were made on their behalf to the Campaign for Tobacco-Free Kids.

Statistical Analysis

Described here are characteristics of the participating pharmacies and personnel (pharmacists, technicians), and their baseline level of tobacco cessation counseling activities using standard summary statistics. Also summarized are quitline call data obtained during the baseline monitoring period. All data were analyzed using SPSS Version 18.0 (Chicago, Ill.)

The primary analysis focused on changes in the number and percentage of quitline calls from callers who report hearing about the quitline from a pharmacy between the baseline monitoring period and the 12 month follow-up. Because the intervention materials were distributed after the baseline monitoring period, incoming quitline calls cannot be linked to individual participating pharmacies during this period. Therefore, the changes in quitline call data will be analyzed in aggregate as monthly numbers and percentages. The monthly numbers and percentages will be graphically presented across the baseline and follow-up periods and tested for statistical significance using generalized linear regression modeling with the numbers and percentages regressed on study period and state (Connecticut or Washington).

The secondary analyses focus on the differences in outcomes between study conditions (academic detailing versus mailed materials pharmacies) during the 12-month follow-up period. The outcomes include the number of quitline callers who register for cessation counseling, the total number of quitline cards distributed, and the number of calls per 100 cards distributed at each pharmacy. All outcome measures will be analyzed at the pharmacy level. Comparisons between study conditions will be made using generalized linear regression models with the outcome regressed on the study condition variable, state, and pharmacy type.

BASELINE RESULTS

Participating Community Pharmacies

Pharmacy characteristics—Overall, the recruitment success rate was 50% (49% of independent pharmacies and 51% of retail chain pharmacies). Of 64 pharmacies that enrolled in the study, our sampling strategy ensured that 50% were independently-owned and 50% were retail chain (21 traditional stand-alone pharmacies, 8 grocery store pharmacies, and 3 mass merchant pharmacies). Most locations were equipped with semi-private counseling areas (76%), 14% had private counseling areas, and 10% had both. Nearly one third provided training for pharmacy interns on-site, 20% had a drive-through window, 80% had e-prescribing capability, and 52% had computerized patient records that are linkable with other stores. Services provided by the study sites included immunizations (47%), medication therapy management services (45%), blood pressure monitoring (44%), diabetes monitoring/management (29%), asthma management (27%), cholesterol monitoring/management (13%), weight management counseling (9%), and bone density screening (6%).

Tobacco cessation counseling activities in participating community pharmacies—A dedicated computer field for documenting smoking status was available in 34% of pharmacies, and a new-patient intake form that includes a question about tobacco use was available in 13% of pharmacies. On average, it was estimated that 5% (median, 0) of all prescription patients at the 64 participating pharmacies were asked about tobacco use.

Thirteen percent of pharmacies proactively attempt to address smoking, even when not asked for advice by patients, 94% of pharmacies provide cessation counseling when asked by patients, and 17 (27%) provide smoking cessation counseling as a clinical service. One pharmacy offered a formal cessation program, and 38% of pharmacies indicated that their staff refers patients to other cessation providers.

Study Participants

Pharmacists—Among 124 pharmacists who consented for participation, 120 completed a baseline survey (97%); of these, 78% had a BS in pharmacy, 23% had a PharmD, 6% had completed a residency, and 1% had completed a fellowship. Most pharmacists were male (55%) with an average age of 47 (SD, 13) years. Eighty-one percent of pharmacists were white, 9% were Asian, and the remainder was of other or multiple races. The average number of years worked as a pharmacist was 22 (SD, 14) years. Three percent were current tobacco users, and 20% were former tobacco users.

Approximately one fourth (23%) had received cessation training in pharmacy schools, and 28% had participated in a cessation training program after graduating from pharmacy school. One third indicated that they were either somewhat (30%) or very familiar (3%) with their State's tobacco quitline, and the remainder (67%) were not at all familiar with the quitline. In the past month, pharmacists reported that the median number of patients that they (a) asked about smoking was zero, (b) advised to quit smoking was two, (c) provided cessation counseling was one, and (d) discussed the quitline was zero. Eight percent of pharmacists reported that they routinely asked patients about tobacco use.

Pharmacy technicians—Among 127 technicians who consented for participation, 125 completed a baseline survey (98%); of these, 29% were certified pharmacy technicians. Most technicians were female (89%) with an average age of 36 (SD, 12) years. The average number of years worked as a technician was 8 (SD, 7) years. Eighty-two percent of technicians were white, 6% were black, 4% were Asian, and the remainder was of other or multiple races. Twelve percent were current tobacco users, and 31% were former tobacco users.

Half of the technicians indicated that they were either somewhat (41%) or very familiar (9%) with their State's tobacco quitline, and the other 50% were not at all familiar. In the past month, participating technicians reported having asked no patients whether they smoke, advised no patients to quit, and discussed the tobacco quitline with no patients (values reported are medians). Four percent of technicians reported that they routinely asked patients about tobacco use.

Quitline Registrants Referred by Pharmacies

During the baseline monitoring period, quitline registrants totaled 120 people (18 in CT and 102 in WA) who reported that they heard about the quitline from a pharmacy. This registration rate yields 3.3 referrals per month in CT (from a total of 593 community pharmacies) and 18.8 referrals per month in WA (from a total of 1,085 community pharmacies).

DISCUSSION

This novel, evidence-based approach to tobacco cessation was designed to enhance tobacco cessation activities in community pharmacies. The randomized trial aspect of this study compares the effectiveness of an academic detailing model versus mailed materials to generate pharmacy-based referrals to tobacco quitlines. The baseline monitoring period,

when compared to a parallel snapshot of time one year later, will provide a basis for estimating the impact of the 64 pharmacies in altering the overall changes in the number and proportion of quitline callers who reported hearing about the quitline from a pharmacy.

A pharmacy recruitment rate of 50% suggests that pharmacy staff members are receptive to the *Ask-Advise-Refer* intervention concept and the study methods. Various types of participating community pharmacies are represented in this study, including independent and chain pharmacies as well as grocery and mass merchant stores with pharmacies. The study's stratified random sampling method was designed to enhance representativeness of pharmacies in racially/ethnically diverse locations.

Consistent with our prior research,^{8,34} few patients filling prescriptions at the participating pharmacies were asked about tobacco use at baseline. Because the most likely opportunity to ask about tobacco use occurs at the intake of new or refill prescriptions, our intervention approach includes pharmacy technicians as part of the *Ask-Advise-Refer* process, because prescription intake is a key component of their role. Furthermore, previous research suggests that pharmacy technicians are interested in assisting with assessing the tobacco use status of patients.³⁵

Quitline referrals from pharmacies during the baseline monitoring period were exceptionally low—the number of registered quitline callers who reported that they heard about the quitline from a pharmacy was approximately 22 per month, representing referrals from a total of 1,678 pharmacies in CT and WA combined. Given that most pharmacy personnel in the study were unfamiliar with the tobacco quitline, this low referral rate could be anticipated. Furthermore, the literature published in the past five years indicates that (a) while pharmacists are interested in assisting patients with tobacco cessation, few pharmacists actually provide assistance,^{8,10,11,13} and (b) most patients do not perceive pharmacies as a resource for tobacco cessation.³⁴ The *Ask-Advise-Refer* model, because of its simplicity, is being embraced by numerous professions and institutions,² and pharmacy applications are being explored, implemented, and evaluated.^{15–18,24}

The financial costs associated with the intervention approaches being examined in this study are low in comparison to the costs of treating tobacco-related disease and have the potential to be disseminated widely to community pharmacies and other clinical settings, such as ambulatory care clinics, dental practices, emergency departments, and outpatient physician offices. Pharmacy-based tobacco cessation efforts could have a substantial impact in reducing the prevalence of tobacco use. Nationwide, just over 60,000 community pharmacies employ an estimated 178,420 pharmacists and 267,000 pharmacy technicians.³⁶ If each community pharmacist and technician in the United States was to refer just one patient to a quitline each week, this would result in approximately 23.2 million referrals annually.

Although the randomized trial design is considered the gold standard, the approach taken here nonetheless has weaknesses. Specifically, the sample size of 64 might have limited power to detect pharmacy-level factors that are associated with adoption of the *Ask-Advise-Refer* model. Additionally, although the sampling strategy attempts to ensure participation of pharmacies located in areas of high minority, Connecticut and Washington are primarily white. Furthermore, because the study does not include patients as study participants, the investigators' ability to determine the racial/ethnic distribution of the patients will be limited to data that are collected by the quitline from patients as they register for quitline counseling. Strengths include the overall size of the trial, involvement of pharmacists and technicians in both retail chain and independent pharmacies, a theory-based approach to intervention development and evaluation, and access to quitline call data that can

demonstrate not only group differences (between intervention arms) but also changes in overall quitline call volume from patients who report having heard about the quitline from a pharmacy.

CONCLUSION

Novel approaches are needed to capitalize on the community pharmacy's frequent and widespread interface with all segments of the public. If the results of the study are positive, the perceived value and overall reach of this intervention could impact millions of tobacco users nationwide.

Acknowledgments

Funded by the National Cancer Institute grant R01 CA 129312 to K Hudmon. A portion of Dr. Zillich's time was supported by a Career Development award RCD 06-304-1 from the Department of Veterans Affairs, Health Services Research and Development.

The authors thank the Connecticut State Public Health Department and the Washington State Department of Health for their support of the study and provision of service to pharmacy patients referred to the quitline. Tyson Dickman and Oman Kordahi assisted with obtaining permission from the states to use and/or modify quitline materials. The Connecticut Pharmacists Association (Marghie Giuliano) and the Washington State Pharmacy Association (Jenny Arnold, Jeff Rochon) provided invaluable assistance in recruiting pharmacies. Bruce Berger reviewed the video vignette scripts, and Deb Barlay assisted with graphics for all study-related materials. William Ferri, owner of Ferri Pharmacy in Murrysburg, PA, kindly provided all-night access to the pharmacy location for filming video vignettes, and filming and production of videos was conducted by Ray Gilmore (Polestar Productions, Pittsburgh, PA). Kyle Hultgren worked tirelessly to provide academic detailing interventions at randomly-selected pharmacy locations throughout WA and CT. Jennifer Pech Cinnamon assisted with creation of the automated quitline survey for the study, and Cami Douglas assisted with distribution and tracking of study surveys. Finally, we wish to thank the pharmacies (chain corporations and independently-owned pharmacies), pharmacists, and pharmacy technicians for agreeing to participate in the study.

REFERENCES

1. Fiore, MC.; Jaén, CR.; Baker, TB.; Bailey, WC.; Benowitz, NL.; Curry, SJ., et al. Clinical Practice Guideline. Rockville, MD: U.S. Department of Health and Human Services. Public Health Service; 2008. Treating Tobacco Use and Dependence: 2008 Update.
2. Bonniot Saucedo C, Schroeder SA. Simplicity sells: Making smoking cessation easier. *Am J Prev Med.* 2010; 38(3 Suppl):S393–S396. [PubMed: 20176313]
3. Schroeder SA. What to do with a patient who smokes. *JAMA.* 2005; 294(4):482–487. [PubMed: 16046655]
4. Dent LA, Harris KJ, Noonan CW. Randomized trial assessing the effectiveness of a pharmacist-delivered program for smoking cessation. *Ann Pharmacother.* 2009; 43(2):194–201. [PubMed: 19193572]
5. Dent LA, Scott JG, Lewis E. Pharmacist-managed tobacco cessation program in Veterans Health Administration community-based outpatient clinic. *J Am Pharm Assoc (2003).* 2004; 44(6):700–714. [PubMed: 15637853]
6. Aquilino ML, Farris KB, Zillich AJ, Lowe JB. Smoking-cessation services in Iowa community pharmacies. *Pharmacotherapy.* 2003; 23(5):666–673. [PubMed: 12741442]
7. Couchenour RL, Denham AZ, Simpson KN, Lahoz MR, Carson DS. Smoking cessation activities in South Carolina community pharmacies. *J Am Pharm Assoc (Wash).* 2000; 40(6):828–831. [PubMed: 11111363]
8. Hudmon KS, Prokhorov AV, Corelli RL. Tobacco cessation counseling: pharmacists' opinions and practices. *Patient Education & Counseling.* 2006; 61(1):152–160. [PubMed: 16533683]
9. Margolis JA, Meshack AF, McAlister AL, Boye-Doe H, Simpson L, Hu S. Smoking cessation activities by pharmacists in East Texas. *J Am Pharm Assoc (Wash).* 2002; 42(3):508–509. [PubMed: 12030638]

10. Meshack A, Moultry AM, Hu S, McAlister AL. Smoking cessation counseling practices of Texas pharmacists. *J Community Health*. 2009; 34(3):231–238. [PubMed: 19132517]
11. Prokhorov AV, Hudmon KS, Marani S, et al. Engaging physicians and pharmacists in providing smoking cessation counseling. *Arch Intern Med*. 2010; 170(18):1640–1646. [PubMed: 20937922]
12. Williams DM, Newsom JF, Brock TP. An evaluation of smoking cessation-related activities by pharmacists. *J Am Pharm Assoc (Wash)*. 2000; 40(3):366–370. [PubMed: 10853537]
13. Dent LA, Harris KJ, Noonan CW. Tobacco treatment practices of pharmacists in Montana. *J Am Pharm Assoc* (2003). 2010; 50(5):575–579. [PubMed: 20833614]
14. Dent LA, Harris KJ, Noonan CW. Tobacco interventions delivered by pharmacists: a summary and systematic review. *Pharmacotherapy*. 2007; 27(7):1040–1051. [PubMed: 17594210]
15. Baggarly SA, Jenkins TL, Biglane GC, Smith GW, Smith CM, Blaylock BL. Implementing a referral to telephone tobacco cessation services in Louisiana community pharmacies: a pilot study. *Ann Pharmacother*. 2010; 44(9):1395–1402. [PubMed: 20628045]
16. Patwardhan PD, Chewning BA. Ask advise and refer: hypothesis generation to promote a brief tobacco-cessation intervention in community pharmacies. *Int J Pharm Pract*. 2009; 17(4):221–229. [PubMed: 20161528]
17. Patwardhan PD, Chewning BA. Tobacco users' perceptions of a brief tobacco cessation intervention in community pharmacies. *J Am Pharm Assoc*. 2010; 50(5):568–574.
18. Hoch MA, Hudmon KS, Lee L, et al. Pharmacists' perceptions of participation in a community pharmacy-based nicotine replacement therapy distribution program. *J Community Health*. 2011 (e-pub ahead of press).
19. Lichtenstein E, Glasgow RE, Lando HA, Ossip-Klein DJ, Boles SM. Telephone counseling for smoking cessation: rationales and meta-analytic review of evidence. *Health Educ Res*. 1996; 11(2):243–257. [PubMed: 10163409]
20. Hopkins DP, Briss PA, Ricard CJ, et al. Reviews of evidence regarding interventions to reduce tobacco use and exposure to environmental tobacco smoke. *Am J Prev Med*. 2001; 20(2 Suppl): 16–66. [PubMed: 11173215]
21. Stead LF, Lancaster T, Perera R. Telephone counselling for smoking cessation. *Cochrane Database Syst Rev*. 2003; (1):CD002850. [PubMed: 12535442]
22. Stead LF, Perera R, Lancaster T. Telephone counselling for smoking cessation. *Cochrane Database Syst Rev*. 2006; 3:CD002850. [PubMed: 16855992]
23. Adsit R, Fraser D, Redmond L, Smith S, Fiore M. Changing clinical practice, helping people quit: the Wisconsin Cessation Outreach model. *WMJ*. 2005 May; 104(4):32–36. [PubMed: 16117231]
24. Purcell JL, Farris KB, Aquilino ML. Feasibility of brief smoking cessation intervention in community pharmacies. *J Am Pharm Assoc* (2003). 2006; 46(5):616–618. [PubMed: 17036649]
25. Soumerai SB, Avorn J. Principles of educational outreach ('academic detailing') to improve clinical decision making. *JAMA*. 1990; 263(4):549–556. [PubMed: 2104640]
26. Caudill TS, Johnson MS, Rich EC, McKinney WP. Physicians, pharmaceutical sales representatives, and the cost of prescribing. *Arch Fam Med*. 1996; 5(4):201–206. [PubMed: 8769907]
27. Fischer MA, Keough ME, Baril JL, et al. Prescribers and pharmaceutical representatives: why are we still meeting? *J Gen Intern Med*. 2009; 24(7):795–801. [PubMed: 19424764]
28. Wazana A. Physicians and the pharmaceutical industry: is a gift ever just a gift? *JAMA*. 2000; 283(3):373–380. [PubMed: 10647801]
29. O'Brien MA, Oxman AD, Davis DA, Haynes RB, Freemantle N, Harvey EL. Educational outreach visits: effects on professional practice and health care outcomes. *Cochrane Database Syst Rev*. 2000; (2):CD000409. [PubMed: 10796542]
30. Albert DA, Anluwalia KP, Ward A, Sadowsky D. The use of 'academic detailing' to promote tobacco-use cessation counseling in dental offices. *J Am Dent Assoc*. 2004; 135(12):1700–1706. [PubMed: 15646603]
31. Daly MB, Balshem M, Sands C, James J, Workman S, Engstrom PF. Academic detailing: a model for in-office CME. *J Cancer Educ*. 1993; 8(4):273–280. [PubMed: 8186079]

32. Goldstein MG, Niaura R, Willey C, et al. An academic detailing intervention to disseminate physician-delivered smoking cessation counseling: smoking cessation outcomes of the Physicians Counseling Smokers Project. *Prev Med.* 2003; 36(2):185–196. [PubMed: 12590994]
33. Swartz SH, Cowan TM, DePue J, Goldstein MG. Academic profiling of tobacco-related performance measures in primary care. *Nicotine Tob Res.* 2002; 4(Suppl 1):S38–S44. [PubMed: 11945218]
34. Hudmon KS, Hemberger KK, Corelli RL, Kroon LA, Prokhorov AV. The pharmacist's role in smoking cessation counseling: perceptions of users of nonprescription nicotine replacement therapy. *J Am Pharm Assoc (Wash DC).* 2003; 43(5):573–582.
35. Zillich AJ, Aquilino ML, Farris KB. Knowledge and attitudes about smoking cessation among pharmacy technicians. *J Am Pharm Assoc (Wash DC).* 2004; 44(5):578–582.
36. National Association of Chain Drug Stores. Chain Pharmacy Industry Profile 2010–2011. Alexandria, VA: National Association of Chain Drug Stores; 2010.

Figure 1.
Study design and measurement components.

Table 1

Intervention components provided to participating pharmacies, by intervention arm.

Intervention component	Intervention Arm	
	Academic Detailing	Mailed Materials
Cover letter from the state quitline, describing the project and its collaborators/endorsers, including state and national pharmacy associations	X	X
1-page document describing the efficacy of the quitline and the process that occurs when a patient calls the quitline	X	X
Quitline cards (with pharmacy ID number)	X	X
Quitline tri-fold brochures (with pharmacy ID number)	X	X
Plastic counter-top display, to hold the quitline cards and quitline brochures	X	X
“Ready to Quit? I can help” buttons, to be worn on the lapel of pharmacy staff	X	X
Quitline stickers, for placement on prescription bags	X	X
Quitline posters, to be placed on walls near the pharmacy counter	X	X
<i>Pharmacologic Product Guide</i> and <i>Drug Interactions with Smoking</i> resource materials, for use by pharmacists (laminated)	X	X
<i>How to Implement Ask-Advise-Refer</i> resource, describing step-by-step process, for use by pharmacists and technicians (laminated)	X	X
Re-order form for materials	X	X
Quitline fax referral forms	X	
CD-ROM with video vignettes of the <i>Ask-Advise-Refer</i> counseling approach	X	
Relevant published literature, supporting the concept of the quitline	X	

Table 2*Ask-Advise-Refer* academic detailing protocol.

Detailing component	Time estimate
Introduction <ul style="list-style-type: none"> - Background information (academic detailer, pharmacist, technician) - Purpose for meeting today - Identify collaboration with State Pharmacy Association, Department of Health, and Purdue University 	1 min 1 min 30 sec
Introduce topic of tobacco cessation <ul style="list-style-type: none"> - Pharmacy's role in tobacco cessation - Ask about current level of tobacco cessation activities (asking, advising, assisting) - What tools/techniques, if any, are currently being used in the practice setting to help patients quit smoking? - Perceptions and knowledge of the state tobacco quitline - What smoking cessation provider capabilities would you like to have? 	30 sec 1 min 30 sec 1 min 2 min
Display tobacco cessation counseling vignettes <ul style="list-style-type: none"> - Ready to quit (pharmacist / technician) - Not ready to quit (pharmacist / technician) - Discuss routine integration of <i>Ask-Advise-Refer</i> into patient intake/counseling activities - Emphasize that if counseling is needed, it is to be provided by the pharmacist 	2 min 2 min 3 min 30 sec
Provide intervention materials <ul style="list-style-type: none"> - Quitline cards, how to use, and purpose - Fax referral forms, how to use, and purpose - Brochures, posters, stickers, misc. materials 	1 min 1 min 1 min
Closing <ul style="list-style-type: none"> - Questions and answers - Offer to assist with placement of the materials in the pharmacy 	As needed As needed