"Let Me Get You a Nicotine Patch": Nurses' Perceptions of Implementing Smoking Cessation Guidelines for Hospitalized Veterans

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ABSTRACT Many hospitalized smokers do not receive guideline-recommended tobacco treatment, but little is known about the perceptions of inpatient nurses with regard to tobacco treatment. We used a sequential explanatory mixed methods design to help explain the findings of an academic detailing intervention trial on the inpatient medicine units of four Veterans Affairs (VA) hospitals. We surveyed 164 nurses and conducted semistructured interviews in a purposeful sample of 33 nurses with different attitudes toward cessation counseling. Content analysis was used to inductively characterize the issues raised by participants. Emerging themes were categorized using the knowledge-attitudes-behavior framework of guideline adherence. Knowledge-related and attitudinal barriers included perceived lack of skills in cessation counseling and skepticism about the effectiveness of cessation guidelines in hospitalized veterans. Nurses also reported multiple behavioral and organizational barriers to guideline adherence: resistance from patients, insufficient time and resources, the presence of smoking areas on VA premises, and lack of coordination with primary care. VA hospitals should train inpatient staff how to negotiate behavior change, integrate cessation counseling into nurses' workflow, develop alternative referral mechanisms for post-discharge cessation counseling, and adopt hospital policies to promote inpatient abstinence.

INTRODUCTION

Hospitalization has been identified as a "teachable moment" for many smokers.[1] The Joint Commission's Tobacco Treatment performance measure requires hospitals to identify and document tobacco-use status in all admitted patients, provide evidence-based smoking cessation counseling and medication for all identified tobacco users (in the absence of contraindications or patient refusal), and provide a referral at discharge for follow-up cessation counseling.[2] U.S. Department of Veterans Affairs (VA) hospitals have banned indoor smoking since 1991,[3] and provide access to smoking cessation medications and counseling in various formats, including individual and group sessions, telephone counseling, and/or telemedicine.[4,5] Although cessation of tobacco use continues to be a public health priority in VA, many hospitalized veterans are not provided with guideline-recommended smoking cessation pharmacotherapy and counseling, even though most are admitted with a tobacco-related condition and are contemplating cessation.[6,7]

One strategy to reduce gaps in inpatient cessation counseling is to engage nurses in bedside cessation counseling, which has been shown to increase quit rates if coupled with sustained post-discharge counseling (>4 weeks).[8,9] Prior studies have demonstrated the feasibility of training VA nurses to provide the 5As of brief cessation counseling (Ask, Advise, Assess, Assist, Arrange follow-up)[10] to medical inpatients.[11,12] Significant gaps in care remain, however, even after nurse training in use of the 5As.[11] Frontline nursing staff may resist managerial interventions that they consider to lack relevance to their patient population and use discretion in deciding whether to implement practice policies.[13] As relatively little is known about the perceptions of inpatient nursing staff with regard to providing tobacco treatment, the purpose of this study was to identify barriers and facilitators to implementation of the 5As from the nursing perspective and to attain a deeper understanding of the organizational context[14,15] of smoking cessation on VA general medicine units.

METHODS

Study Design

We used a sequential explanatory mixed methods design in which qualitative results are used to assist in explaining the findings of a primarily quantitative study.[16] The primary aim of this trial was to determine the effectiveness of an enhanced academic detailing intervention that targeted unit nurses on use of the 5As and cessation rates in hospitalized veterans.

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Academic detailing is a form of educational outreach that employs two-way interactions with clinical staff to encourage adoption of a desired practice pattern.[17] This project was approved by the institutional review board at each study hospital and written consent was obtained from all participants.

The intervention was based on an adaptation of the Chronic Care Model,[18–20] which provides a framework for the management of relapsing and remitting chronic conditions such as nicotine dependence. Key components of the intervention included the following (Chronic Care Model element is shown in parentheses): (1) academic detailing of inpatient unit nurses to initiate smoking cessation assessment and counseling, based on the 5As model (delivery system redesign); (2) adaptation of the nursing admission template (clinical information system/decision support); (3) ready access to patient education materials on the unit (self-management support); (4) fax referral of motivated smokers to a state Tobacco Quitline (linkage to community resources); and (5) use of peer leaders and performance feedback (organizational support). The intervention phase lasted 8 months on average at each study site. Details of the implementation trial and quantitative findings are provided elsewhere.[6,11,21]

Study Setting

We included four academic VA hospitals in the upper Midwest and Rocky Mountain region with approximately 2,700 to 4,400 general medical admissions annually. At all sites, internal medicine residents rotated through the medicine service in 3- to 4- week blocks; nurses worked closely with resident physicians in obtaining orders for smoking cessation medication, such as nicotine replacement therapy (NRT). All VA hospitals use an integrated computerized patient record system (CPRS).

Sampling and Data Collection

All registered nurses who provided direct patient care on the internal medicine units ($N = 245$) were invited to complete a written pre- and postintervention survey, and were eligible to participate in a postintervention interview. Licensed practical nurses, nurses from outside agencies, and float nurses were excluded. The postintervention survey was administered immediately before the in-depth interview.

Nurse Survey

The questionnaire included a 20-item decisional balance questionnaire (DBQ), which assesses positive and negative attitudes ("pros" and "cons") toward the delivery of smoking cessation assistance[22] and two items that asked nurses to rate their self-efficacy and satisfaction in helping patients to stop smoking.[23]

Semistructured Interviews

All unit nurses who completed the preintervention survey ($n = 218$) were eligible to participate in a postintervention interview. To ensure variability in preintervention attitudes toward cessation counseling, we grouped nurses into four possible subgroups based on their DBQ "pros" and "cons" subscale scores, dichotomized at the median. We conducted semistructured interviews in a purposive sample of nurses, who were randomly selected from each of the four possible DBQ subgroups: (1) high "pros" and low "cons" ($n = 9$), (2) high "pros" and high "cons" ($n = 8$), (3) low "pros" and high "cons" ($n = 8$), and (4) low "pros" and low "cons" ($n = 8$).

Questions in the interviewer's guide were structured around key themes in the literature, and focused on: (1) local smoking cessation practices (including the roles of nurses, physicians, pharmacists, and substance abuse counselors), (2) local "smoking culture," (3) barriers and facilitators to changing tobacco treatment practices, (4) any changes that occurred as a result of the study intervention, and (5) strategies that may facilitate change at the facility (see the Appendix). One interviewer led the discussion, while a second member of the study team took notes and oversaw audio recording of the interview. Both interviewers were PhD anthropologists with a strong background in the use of qualitative methods. We conducted interviews until saturation was attained (i.e., until no new themes were identified).[24] Interviews were scheduled approximately 6 weeks after the postintervention period at a time that was convenient for participants and lasted 19 minutes on average (range, 9–37 minutes).

Data Analysis

Interviews were audio recorded, transcribed, and audited for completeness and accuracy. All interviews and field notes were imported into MAXQDA 10 (Berlin-Marburg-Amoneburg, Germany), a qualitative data management and analysis software program. We used conventional content analysis to inductively characterize the issues raised by study participants and to construct a provisional coding structure that was then tested using a subset of transcripts.[25] To develop the codebook, a set of transcripts was independently coded by two members of the research team and emergent themes were discussed. The codebook design grouped together similar themes or topics under overarching domains. Relevant text identified in interview data was then coded accordingly; data could be coded in more than one category. All transcripts were independently reviewed by two coders and inter-rater agreement was checked for each code. For those codes in which inter-rater agreement was less than 80%,[26] all discrepancies were discussed and resolved using coding consensus.[27] The coding structure was revised iteratively as new themes emerged. All qualitative data were coded without knowledge of quantitative survey or 5As counseling data.

Initially, related codes were grouped under three overarching themes (application of the 5As, barriers to implementation, and impact of the intervention). As the analysis progressed, however, it became apparent that the emerging themes shared several commonalities with the knowledge-attitudes-behavior framework of guideline adherence, which describes a general mechanism of action for practice guidelines and provides a

useful taxonomy of barriers to guideline adherence.[28,29] Thus, qualitative findings were subsequently organized according to this framework. To complement the qualitative analysis, we also compared nurses' responses to survey items that pertain to knowledge (2 items), attitudes (8 items), and behavioral factors related to patients (3 items) before and after the intervention, using the signed rank test.

RESULTS

Of the 245 eligible nurses at baseline, both pre- and postintervention surveys were completed by 164 nurses (67%), 126 of whom consented to the in-depth interview (77% of survey completers). We conducted 33 qualitative interviews with nurses on 9 inpatient wards at the 4 study sites. Average age of interviewees was 42 years, 73% were female, and 9% were current smokers. Interviewees had a median of 7 years of experience as a hospital nurse (interquartile range, 4–15.5). Nurses who participated in the in-depth interview were more likely to be male and had higher mean "cons" scores on the DBQ, compared to those who did not participate (29.6 versus 24.8, $p < 0.05$). Our analysis revealed several knowledge-related, attitudinal, behavioral, and organizational barriers to guideline adherence that may have limited the overall impact of the intervention (Table I).

Knowledge of Smoking Cessation Guidelines and 5As Algorithm

Although all nurses received face-to-face instruction in use of the guideline algorithm, insufficient skill in cessation counseling was identified as a major barrier to implementing the 5As for 29% of nurses on the postintervention survey (Table II). Similarly, 23% of nurses reported that lack of awareness of the best strategies for helping patients to stop smoking was very important in their decision to provide (or not provide) cessation counseling. Interviewed nurses reported that the integration of the 5As algorithm into CPRS and the availability of cessation materials facilitated their use of smoking cessation guidelines and provided structure to their counseling. One nurse commented, "I think overall it [CPRS] made people more aware of remembering to ask people and check. . ." (Nurse 400)

Although many nurses commented that integration of the 5As algorithm into CPRS enhanced their ability to provide cessation counseling, interview data revealed fundamental misunderstandings about the Quitline referral process on the part of both staff and patients. Most notable was the misconception that patients who wanted to quit smoking would need to contact the Quitline when in fact referred patients were contacted proactively by a Quitline counselor. As one nurse explained:

> "Nobody wanted to call that Quitline. [Patients] just had like no interest in [the Quitline] whatsoever. I [would] ask them, 'If you would want to call the Quitline?' They're like, 'No!' (mimicks a snarling voice)." (Nurse 849)

Attitudes Toward Smoking Cessation Counseling

Outcome Expectancy

Nurses were not strongly influenced by the perceived effectiveness of cessation counseling in determining whether or not to counsel patients. Following the intervention, only 45% rated this factor as a very important determinant of their decision to provide cessation counseling (Table II). Some nurses expressed a sense of futility with regard to cessation counseling:

> "It's my experience that no matter how much information you give people and no matter how many times you tell 'em, and how much nicotine replacement therapy you give 'em, they're not going to quit until they're ready to. It has to come from the heart, it can't come from any outside source, so, I really don't. . .know that any of the studies or anything will do any good." (Nurse 204)

Some nurses also reported frustration with the referral process because they did not receive any feedback from the Quitline on the participation of referred patients in cessation counseling (or their smoking status after hospital discharge), which may have contributed to the perception that cessation counseling was ineffective.

Self-Efficacy

On the postintervention survey, 47% of nurses rated themselves as moderately to very effective in cessation counseling (compared to 31% before intervention, $p = 0.006$). Similarly, nurses were less likely to report lack of confidence in their ability to help patients stop smoking as an important factor in their decision to provide cessation counseling (18 versus 31% before intervention) (Table II). Some nurses felt less effective in helping patients quit smoking compared to physicians, however:

> "I feel like a lot of the times our patients are like, 'Well, that's not how the doctor told me!' or, 'I want to talk to the doctor!'. . .They know that we're not prescribing their medications. They know that we can't really make any changes. We can only suggest things. . . I think the doctors' influence on those sort of education conversations [is] probably a little more effective, but I've definitely had some receptive patients to my teaching, too. . ." (Nurse 859)

Clinical Inertia

On the postintervention survey, 16 and 24% of nurses endorsed statements that cessation counseling was "not a priority" or "not an efficient use of my time," respectively, suggesting that competing clinical demands and clinical inertia (i.e., lack of motivation to change clinical behavior) were significant barriers to guideline adherence for a subset of respondents. Some nurses also perceived that the attitudes

TABLE I. Selected Comments of Inpatient Nurses: Knowledge, Attitudes, and External Barriers to Implementation of Smoking Cessation Guidelines

I. Knowledge of Smoking Cessation Guidelines and 5As Algorithm	
Awareness or Familiarity with Smoking Cessation Guidelines or Intervention Procedures	"To me it was a little confusing in the beginning, as far as when I was asking, going through the questions, and even still now, I've gotta really read the questions, and think, what am I asking the patients. . .It's just, as far as, are they still, are they smoking now, and then you hit 'no,' and then you still have another question. 'Have you smoked in the last year?'" (Nurse 604) "It wasn't too bad. I think just because it [Quitline referral] was so new. I mean, I think if I had done more of them, it would have been pretty good, but I think just the fact that it was new to me and time-consuming—and that's such a big thing—it's just time-consuming." (Nurse 400)
II. Attitudes Toward Smoking Cessation Counseling	
Self-Efficacy in Performing Cessation Counseling	"So I think it's kind of a personal thing and someone's not going to be responsive to you if they don't feel like your heart [is] in it, and you're really concerned about them on a personal level and it's hard to exhibit that when you're really not, at that point. . ." (Nurse 851) "[P]eople who had the attitude that it doesn't matter what we say, they're gonna smoke if they want to or not. . .no matter what we say." (Nurse 619)
Clinical Inertia	". . .You know, everyone knew about it, but. . .I won't say that no one really cared, but there wasn't much of a push or . . . impetus to follow through on [smoking cessation], you know. . ." (Nurse 240) "It [the intervention] wasn't that high of a priority for ME on a daily basis, because I have so many other things to do that I couldn't advocate for smoking cessation maybe as much as I should have or would like to have." (Nurse 605)
III. Behavioral and Organizational Factors	
Applicability to Patients on Unit	"It [the intervention] probably not a whole lot, but I think that has to do with the population I serve. Had the study been done in another environment with a different population set it may have been different. I felt very discouraged by the whole thing, and I didn't see a whole lot of effect, and I don't know if it would have been the same way in another setting. Maybe so, maybe not. But, I think that most of our fellows that smoke have so many co-morbid conditions and so many other social things going on that I don't know if they're able to maybe fully grasp, in a lot of situations what the actual ramifications are, or maybe they just don't care." (Nurse 605)
Inability to Reconcile Guideline with Patient Preferences	"[The intervention's] not really any different 'cause, I mean, the veterans are what they are. I mean, most of them are, 'No, I'm not quitting.' So that's what I expected." (Nurse 824)
Patients Unable or Unwilling to Follow Guidance Regarding Smoking Cessation	"You know, they're tired, they're hungry, they're sick, and first thing we do is start asking 'em about smoking, and a lot of 'em are resentful of that because here I am sick and you're gettin' on my butt about smoking, even though we're not . . . actually harassing 'em about it. They consider it to be harassment because, 'That's one of the reasons I'm here, I know it, and now you're on my back about it.' So I've run into that." (Nurse 204) "But, the three o'clock in the morning admits, they really don't want to discuss much, and so it can be kinda disheartening to work a program when people are like, 'Just get the pain meds and let me go to sleep!'" (Nurse 813) "It [the Quitline] is just unhandy for them. You know, 'when I wanna have a cigarette, I'm not going to call somebody to talk me out of it. I'm gonna go have a cigarette.' That's basically what I got from [patients]." (Nurse 204)
Limited Time or Resources to Provide Tobacco Treatment	"I think night shift has more time to sit and talk with patients. Day shift is hectic, crazy, can't get anything done, REALLY hard to do teaching. I'm a new grad so I focus more on certain tasks and getting meds passed and things done. Sometimes my teaching during day shift suffers." (Nurse 849, day shift) "I don't usually incorporate that into my patient care, and that's a time issue. It's just not part of usually when we're . . . , we have a three to four hour window on the night shift where we're trying to get everything done for our patients before they go to sleep. So, we have physical assessments, medication administration and whatever else, lab draws, all sorts of stuff that needs to get done in that time frame, so I don't usually bring the subject up." (Nurse 851)

(continued)

TABLE I. Continued

III. Behavioral and Organizational Factors	
	"Well, time is a barrier up here. Otherwise, I mean, the, the information in there is good. . . . I don't think you could add any more to it that wouldn't be wasted. I just think it's a time factor. Like I got a guy right now that's chomping at the bit to get out of here. And then I have paperwork that they have to do for him and as soon as he's gone, he'll probably . . . , pharmacy's gonna be talking to him pretty quick here, then he wants to be home by noon. And as soon as he's gone, then I have another patient, waiting for him to come in. And so, it's a time factor." (Nurse 421)
Staffing Constraints	"I think that the best thing would be to have a smoking cessation co-coordinator. I don't think you have to hire someone full time for the whole hospital, but there's to be someone on each floor who keeps track of all the admissions and just follows up and it wouldn't take that much. I mean if I'm able to, in what little spare time I have to do these audits and keep track of this, there's no reason why I couldn't follow up or work with our charge nurse too." (Nurse 240)

of their colleagues presented barriers to delivering the 5As. As one nurse explained:

> "I think some of our more experienced nurses. . . are a little more lackadaisical because they're just kinda like tired of it or they'll say, 'He's never gonna change, so I'm not gonna do anything about it.'" (Nurse 849)

In addition, some nurses felt that coworkers who smoked were less enthusiastic about delivering the 5As intervention and set a poor example for patients; frequent smoke breaks were regarded as a hindrance to good patient care.

Behavioral and Organizational Factors

Themes in this domain generally fell into five categories: (1) patients' interest in quitting, (2) inpatient versus outpatient setting for tobacco treatment, (3) coordination with primary care, (4) VA policies on smoking, and (5) time and resources needed to deliver the 5As intervention.

TABLE II. DBQ Items Pertaining to Knowledge, Attitudes, and External Factors that may Influence Implementation of Smoking Cessation Guidelines (N = 164). The Proportion of Nurses Who Rated Each Statement as Very Important or Extremely Important in Their Decision to Provide Smoking Cessation Counseling is Shown

	All Nurses (N = 164)		Nurse Who Completed in-Depth Interview (N = 33)	
	Preintervention	Postintervention	Preintervention	Postintervention
Knowledge of Smoking Cessation Guidelines				
I am Unaware of the Best Strategies for Helping Patients to Stop Smoking.	57 (35%)	37 (23%)*	13 (39%)	11 (33%)
I Am Not Familiar With the Guidelines for Prescribing Medication to Help My Patients Stop Smoking.	69 (43%)	63 (39%)*	14 (42%)	18 (55%)
I Have Insufficient Skills to Effectively Counsel Patients About Smoking Cessation.	43 (26%)	47 (29%)	6 (18%)	12 (36%)
Attitudes Toward Smoking Cessation Counseling				
Advice From a Clinician is One of the Best Ways to Help People Stop Smoking (Outcome Expectancy).	63 (38%)	74 (45%)*	12 (36%)	14 (42%)
Smokers Are Generally Noncompliant About Quitting (Outcome Expectancy).	70 (43%)	47 (29%)*	14 (44%)	13 (41%)
Clinician-Delivered Smoking Cessation Interventions Do Not Work (Outcome Expectancy).	24 (15%)	16 (10%)	5 (15%)	5 (15%)
I Am Not Confident in my Ability to Help Patients Stop Smoking (Self-Efficacy).	50 (31%)	30 (18%)*	12 (36%)	6 (18%)*
Smoking Cessation Counseling is Not an Efficient Use of My Time (Lack of Motivation/Clinical Inertia)	32 (20%)	27 (16%)	5 (15%)	9 (27%)
Smoking Cessation Counseling is Not a Priority to Me (Lack of Motivation/Clinical Inertia).	40 (25%)	39 (24%)	8 (26%)	11 (33%)
Counseling Patients About Smoking is Frustrating.	48 (30%)	41 (25%)	11 (33%)	12 (36%)
External factors—Patient Attitudes and Expectations				
Patients Want Me to Help Them Stop Smoking.	72 (44%)	63 (38%)	10 (30%)	11 (33%)
Patients Appreciate it When I Provide Smoking Cessation Counseling.	54 (33%)	62 (38%)	12 (36%)	13 (39%)
Patients Expect Me to Counsel Them About Smoking.	37 (23%)	38 (23%)	6 (18%)	9 (27%)

*$p < 0.05$ for the pre- versus postintervention contrast.

Patients' Interest in Quitting

Based on post-intervention survey data, nurses reported that patients' expectations were a driving factor in their decision to provide cessation counseling; 38% rated the statement "patients want me to help them stop smoking" as highly important. In interviews, some nurses viewed smoking as a personal choice and questioned the appropriateness of infringing upon veterans' right to smoke. Others reported that it may be unrealistic to expect patients to stop smoking during hospitalization. As one nurse explained:

> "And, I found I kinda got discouraged after a while, because I offered the solution, the cessation packets for a while pretty consistently, but I just got shot down, and it just came to the point where every once in a while, it was once in a blue moon [that patients would be interested]... Some of these guys are really sick or really drunk, or really in a mess, and when the admission time comes around, those questions are kind of...you can't even do them... " (Nurse 605)

Inpatient Versus Outpatient Setting for Tobacco Treatment

The acuity of illness in the inpatient setting was seen as both a facilitator and impediment to delivering smoking cessation counseling (Table I). Although there was general recognition that hospital admission could be a "teachable moment," some nurses claimed that the primary care clinic might be a more appropriate setting for the intervention. As one nurse put it:

> "I think that they [primary care] have the best relationship with their patient, hopefully, if the patient's seeing them for their yearly checkups or whatever, so I think there's more of a trust there and they can continue to follow up with the patient over the years. Whereas, we'll [inpatient] see them once and, you know, feed 'em all this information and then send 'em off, whereas the primary can kind of create a relationship and touch on it every visit." (Nurse 866)

> Another nurse explained that continuity was a challenge on the inpatient ward because, "You rarely have the same patient two days in a row on this ward, so a lot of times you're just picking up someone and they're ready to go out the door and you're trying rapidly to go, 'Oh, or do you want to quit smoking?' It's not an ideal teaching opportunity." (Nurse 442)

Coordination With Primary Care

Nurses typically assumed that primary care continued tobacco treatment in the clinic; however, they reported having little contact with primary care staff. One nurse recommended an improved handoff process during the transition to outpatient care:

> "When they're discharged, I would say include in part of their discharge when they have that follow-up appointment with primary care, that there would be a person [who] would see them at that visit and counsel them then and say, 'Are you still staying off the cigarettes?' You know, 'Did you continue the cessation program post-discharge?' And I don't know if they do that." (Nurse 619)

VA Policies on Smoking

Some nurses reported feeling helpless in enforcing "no smoking" rules on their unit because of the presence of smoking shelters adjacent to the hospital. Unlike hospitals in the private sector, VA facilities are required by Public Law 102-585 to provide designated smoking areas on campus, which may undermine efforts to promote smoking cessation in hospitalized patients.[30] According to one nurse:

> "Well, even prior to this [intervention] I've always educated my patients about smoking and quitting. And it's been kind of hard to implement the policy because if they're on telemetry, they're not supposed to leave the floor to go smoke. Well, they do it anyway. They don't care. I mean, what's the consequence? There's no consequence, other than they get taken off the heart monitor." (Nurse 629)

Another nurse took a hard line in dealing with veterans who wanted to leave the unit to smoke:

> "Personally, I can say I think it's too much, 'cause I'm not a smoker, so it doesn't bother me. I don't care if you [haven't] smoked in twelve hours. Let me get you a nicotine patch (chuckles)..." (Nurse 839).

Time and Resources

Nurses reported that the timing of the 5As intervention was difficult on account of competing priorities at the time of admission and a heavy workload. Nurses from both day and night shifts claimed that the occurrence of frequent interruptions was a common barrier to guideline adherence. As one nurse explained:

> "You'll have four patients. You're in with one. You're on your way to go get the packet [of smoking cessation materials] for somebody else, 'Oh, hey! So-and-so,' and so then by the time you get back in [with the patient], they're, 'Oh, I have to go to this appointment,' So, really trying to make [cessation counseling] a priority at that time and setting aside however [much] time it takes to talk about it is difficult..." (Nurse 343).

In addition, the referral process was described as "clunky" and time consuming. Because of limitations of the electronic medical record (as well as VA security concerns), it was not feasible to directly refer patients to the Quitline electronically within CPRS.

Components of the Intervention Reported to be Most Useful

On the postintervention survey, nurses indicated their intention to continue using the 5As for future smokers. Nurses reported that most intervention components were well integrated into

TABLE III. Proposed Strategies to Improve Nurses' Adherence to Smoking Cessation Guidelines on the Inpatient Unit

Barrier to Guideline Adherence	Intervention Approach	Additional Strategy to Improve Tobacco Treatment
Knowledge		
Lack of familiarity with guideline and low self-efficacy in brief cessation counseling	Academic detailing with personalized instruction Online tutorial on use of the 5As	Standardized patients and/or structured role play exercises
Poor recall of procedures to deliver the 5As	5As embedded into the nursing admission template in CPRS	Same as intervention
Attitudes		
Lack of motivation to change practice behavior	Group feedback on performance of the 5As	Feedback on quit line enrollment and short term cessation outcomes
Unable to engage patients in cessation counseling at admission	Nurses instructed to reassess willingness to quit once acute care issues are addressed	Reminder to reassess patient's interest in quitting and missing 5As components before discharge
Behavioral and Organizational factors		
Lack of patient interest in quitting	Stage-based approach to cessation counseling	In-depth training on motivational interviewing
Competing clinical demands with insufficient time to provide cessation counseling	Bedside intervention designed to be delivered in <5 minutes	Hospital-based counselor or nurse champion who provides detailed cessation counseling and coordination of tobacco treatment
Lack of appropriate self-help materials on inpatient unit	Smoking cessation packets (tailored to stage of change)	Add materials on VA smoking cessation resources
Inadequate attention to nicotine withdrawal symptoms	Nurses instructed to offer nicotine patch Quick orders for smoking cessation medications in CPRS	Standing orders for nicotine replacement therapy
Lack of integration of quit line referral into nurses' workflow	Nurses prepared separate referral form for State quit line	Electronic referral to State quit line or QuitVET program
Lack of coordination with primary care	Patient encouraged to discuss tobacco treatment with PCP after hospital discharge	Handoff between inpatient nurse and nurse care manager on patient's primary care team
Permissive VA smoking policies	Not addressed	Comprehensive smoking ban on VA hospital grounds

their usual workflow. For those nurses who believed that smokers should be encouraged and assisted to quit while in the hospital, NRT was identified as a particularly effective component of the intervention. One nurse appreciated the training and self-help materials provided by the intervention:

> "It was nice to have structured questions to ask them, and kind of a guideline as to how to approach them with, um, talking about smoking cessation and stuff like that and to have some resources available if they showed an interest in quitting." (Nurse 411)

Nurses also made several recommendations to improve the intervention (Table III). For example, some nurses suggested designating a "nursing champion" who would be responsible for cessation counseling and coordination of tobacco treatment:

> "...Having one person go around and that be their sole responsibility so they could concentrate on it, and maybe having a smoking champion, for the floor and they would have time off of the floor, a certain amount of time each day. Maybe something like that where you could focus it on a few people who could learn the intervention better and [who] had the time to implement it like it was meant to be implemented." (Nurse 605)

DISCUSSION

The knowledge-attitudes-behavior framework provides a useful model for understanding barriers and facilitators of adherence to smoking cessation guidelines in VA hospitals. During this implementation trial, nurses on VA inpatient units reported that reminders in the electronic medical record and readily available self-help materials on smoking cessation facilitated tobacco treatment. Our results suggest potential areas for improvement of knowledge and self-efficacy. Although we had buy-in from each facility to conduct this study, unit nurses were afforded very limited time for face-to-face instruction, because training was provided during scheduled work hours. Nurses could potentially benefit from further personalized training and feedback on cessation counseling technique using standardized patients and role play.[31,32] Providing staff with adequate time for training and clear, high-quality educational materials promotes implementation of evidence-based practices.[33]

Attitudinal barriers to adoption of the 5As included skepticism about the effectiveness of smoking cessation guidelines for "all" veterans in the inpatient setting. Perceived self-efficacy and normative beliefs about the nurse's role in promoting smoking cessation also influenced adherence to the guideline, as reported by other investigators.[34,35] With regard to the latter, nursing leaders and managers within VA hospitals should promote smoking cessation as an acute care issue, emphasize the unique role of the unit nurse in providing tailored tobacco treatment to all hospitalized smokers, and provide ongoing staff support and feedback on unit performance. At the system level, implementing and enforcing a comprehensive smoking ban on VA campuses would reduce

the visibility of smoking and support patients in their attempts to quit smoking by promoting tobacco-free norms.[30] In contrast, permissive smoking policies limit the effectiveness of cessation efforts and reinforce the idea that smoking is an acceptable part of the military culture.[36] In addition, it is essential to develop streamlined mechanisms for referral to VA and community-based resources (such as QuitVET, a tobacco quitline for veterans recently created by the VA Office of Public Health).

Unit nurses identified several behavioral and organizational barriers to guideline adherence related to the patient population and treatment setting, including the perception that veterans who smoke are unwilling to change their behavior. Several nurses opined that smoking cessation was more appropriately dealt with in primary care settings; similar views have been expressed by emergency department nurses.[37] Heavy workload and competing priorities (particularly at the time of admission) were consistently identified by VA nurses as barriers to effective implementation of the 5As, as reported by others.[38,39] Limitations of the electronic medical record (CPRS) also thwarted efforts to fully integrate the Quitline referral into the nurse's workflow and led to the perception of increased administrative burden. In another recent trial, health care professionals were generally reluctant to refer inpatients to community services for cessation counseling because of an inefficient and time consuming referral process.[39]

A limitation of this study is that we did not elicit the views of nurses who declined to participate in the in-depth interview; these nurses may have expressed alternative views of the intervention. We also did not obtain the perspectives of institutional leaders, senior managers, and other key stakeholders. Finally, this study was limited to internal medicine units in 4 VA hospitals in the United States, and the results cannot be generalized to all VA and nonVA hospitals.

CONCLUSION

This evaluation demonstrates the feasibility and acceptability of an enhanced academic detailing intervention to improve tobacco treatment by unit nurses in VA hospitals. Using the knowledge-attitudes-behavior framework, we identified several barriers to guideline adherence for nursing staff, including perceived lack of skills in cessation counseling, skepticism about the effectiveness of smoking cessation guidelines in hospitalized veterans, multiple competing demands and interruptions, and the presence of designated smoking areas on VA premises. These results can be used to guide the design and implementation of future inpatient smoking cessation programs.

Potential strategies to overcome barriers to guideline adherence are shown in Table III. Brief intervention strategies must be well integrated into the nurse's workflow. Unit nurses should receive training on the art of negotiating behavior change with inpatients at differing levels of readiness to quit (using techniques such as motivational interviewing).[40] Moreover, better channels of communication between the inpatient service and the primary care team are needed, particularly within the framework of the VA's Patient-Aligned Care Team initiative.[41] Because of increasing demands on unit nurses, managers and policymakers should also consider the use of dedicated hospital-based cessation counselors or "nursing champions" who can provide more intensive behavioral support and pharmacotherapy to hospitalized smokers.[42,43] Over the long term, implementation of smoking cessation guidelines in VA hospitals also depends on changing the attitudes and expectations of patients and staff towards smoking on VA premises and enforcing policies that genuinely promote abstinence.

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APPENDIX

Semi-structured interview guide for inpatient nurses

Thinking about your role as a nurse delivering smoking cessation counseling and the role of other health professionals on the unit, we'd like to get your insights in identifying what approaches work and what strategies do not work. We'd also like to discuss the "smoking culture" and smoking cessation strategies currently used at your VA facility.

1. Tell me a bit about [describe] *your experience* with the inpatient smoking cessation intervention (may prompt by talking about brochures, video, 5As, etc.)
    a. What parts of the intervention were you most aware of?
2. What is your perception of patient needs, generally, when it comes to smoking cessation?
3. What role did you play in the intervention when it came to patients on the ward?
    a. How about your interactions with the doctors and residents? What were they like?
4. More generally, in your role as a nurse, what part do you take in the delivery of smoking cessation counseling? Can you describe your personal approach (or a typical exchange with a patient) if a patient is a smoker?
    a. How did your approach change during the course of the intervention?
5. What are the most effective ways that inpatient nurses can help patients quit smoking?
6. What do you do if a patient is experiencing nicotine withdrawal? How do you recognize nicotine withdrawal?
7. Is pharmacotherapy for nicotine withdrawal an effective way to help in-patients quit smoking? In your opinion, when is the best time to offer pharmacotherapy?
8. What are your thoughts on the current referral process to the quitline?

9. What type of follow-up or aftercare is offered at your hospital for smoking cessation? Can you describe what happens during the discharge process?
10. Do you make referrals to quitline or treatment recommendations?
    a. If not, why not? What are the barriers?
    b. Can you identify changes that could be made to facilitate use of the quitline?
11. To what extent are you consulted by residents or attending MDs related to smoking cessation efforts?
    a. What typically happens?
12. What is your sense of how residents or attendings engaged with the intervention?
13. Is smoking cessation counseling something that is typically expected to be done by residents or attending physicians? Why or why not?
14. What are the most effective ways that physicians, pharmacists, and substance abuse counselors can help patients quit smoking?
15. Tell me about whether or not the study intervention lead to any change in your engagement of smoking cessation counseling or your assessment of patients' readiness to change?
    a. What in particular did you adopt/start using?
16. Whose role do you see as most effective in delivering smoking cessation counseling?
17. How would you describe the smoking culture at the VA/your facility?
    a. Is smoking cessation promoted among patients? Staff?
    b. Describe any change(s) you have noticed in the past 6-12 months?
18. What at your hospital promotes or facilitates in-patient smoking cessation?
19. What at your hospital hinders smoking cessation? What is a barrier?
20. Can you think of anything else that is effective when it comes to smoking cessation counseling, anything in particular that works in your experience?
21. What is your role in providing other in-patient preventative services (e.g., alcohol counseling, pneumococcal or tetanus vaccination)? If this is not you role, whose role is it?
22. Is there anything else that you wanted to share with us or expected to talk about?

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