ABSTRACT

HOW PROVIDERS ARE ASSISTING THEIR PATIENTS WITH SMOKING CESSATION

By Adam Deshler

Smoking leads to the death of approximately 440,000 Americans per year. Smoking deaths would be prevented if smoking cessation could be embraced. The Department of Health and Human Services (HHS) updated its guidelines on smoking cessation in 2008, focusing on a framework of 5-As: Ask, Advise, Assess, Assist, and Arrange. These steps currently represent best practice for helping smoking patients to achieve cessation. Since the update in 2008, HHS recommends 3 things for providers regarding smoking cessation: brief counseling, medications (prescription and nonprescription), and referred counseling. This study explored how providers assist their patients with smoking cessation within the context of the HHS smoking cessation guidelines.

The Stages of Change Model developed by Prochaska and DiClemente (1995) is the theoretical framework for the study. When providers are *assisting* their patients with smoking cessation, they are moving them from a state of *Preparation* to a state of *Action*. If HHS guidelines are used, the smoker can progress from the *Action* phase to the *Maintenance* phase.

The researcher used a Likert scale survey. A convenience sample of primary care health providers was obtained from a healthcare organization in the Midwest. The nurse practitioners (NPs) and physician assistants (PAs) were issued a researcher-developed survey via the internet. Data analysis consisted of descriptive statistics.

All of the participants who answered the demographic questions were female, with all but one stating that they were a NP. While some participants had smoked in the past, none were current smokers. Most had practiced between 0 and 4 years and 10 and 14 years. The 2 primary focuses of practice listed were internal medicine and family practice. The number of responses per question ranged from 48 to 44. There were 3 Likert questions, each addressing brief counseling, referred counseling, and medications. Analysis of the data showed that providers were in compliance with the guidelines. The results show the highest compliance was with brief counseling and the least amount of compliance with referred counseling. Over 60% of the participants had not read the 2008 update to the smoking cessation guidelines.

There are several implications that can be ascertained from the study. The first is developing a system that allows a provider to easily disseminate guidelines that affect their practice. The second is developing methods that allow a provider to efficiently provide referred counseling to their patients who smoke.

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by

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To Doodle Bear – Keep reaching for that rainbow.

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CHAPTER I

INTRODUCTION

According to the American Lung Association (2008), smoking is responsible for approximately one in six deaths (440,000) per year in the United States (Morbidity and Mortality Weekly Report, 2005). The World Health Organization (WHO) (2002) estimates that out of everyone alive today, 5,000,000 will die of tobacco related illnesses. The WHO estimates that seven million people per year will die from smoking related illnesses in the year 2030. Unlike many causes of morbidity and mortality, smoking is preventable. Smoking costs the United States at least $167 billion a year in medical costs (*Morbidity and Mortality Weekly Report*). Estimates by the Centers for Disease Control (CDC) place the estimated percentage of Americans that smoke at 21% (*Morbidity and Mortality Weekly Report*). Of the 21% of American adults who smoke, 70% of them not only wish to quit, but have made at least one self-described serious attempt to quit (U.S. Department of Health and Human Services [HHS], 1996).

Healthcare providers have an opportunity to help smokers achieve long term smoking cessation. At least 70% of smokers see their primary care provider annually (*Morbidity and Mortality Weekly Report*, 1993). Each visit is an opportunity for the provider to discuss smoking cessation. Healthy People 2010 has identified a goal of increasing the percentage of smokers who stop smoking one day or longer. Currently the percentage is 41%, with the goal of raising it to 75% (HHS, 2000). The interventions of healthcare providers may help to achieve that goal.

In order to *assist* healthcare providers in providing smoking cessation interventions to their patients, the Five-As were developed (HHS, 2008). The Five-As

are also recommended by the WHO (Raw et al., 2002). The first of the Five-As is *ask*. This involves asking every patient who is seen if they are a smoker. The second A is *advise*. This involves advising every identified smoker that they should quit smoking. The advice should be clear, strong, and personalized to the smoker. The third A is *assess*, involving asking if the smoker is ready to engage in smoking cessation.

If the smoker is willing to engage in smoking cessation, then the provider can move on to the fourth A, which is *assist*. *Assist* consists of three interventions. The first is brief counseling on smoking cessation conducted at the time of the visit. The second intervention is medications, including either prescription, non-prescription, or a combination of both. The third intervention is referred counseling, counseling that the smoker engages in that is outside the initial brief counseling session, including group counseling sessions or a referral to a quit-line. The fifth A is *arrange*. This is scheduling a follow-up visit with the smoker to assess the effectiveness of the smoking intervention. An initial follow-up is recommended in one week, with another follow up appointment within 1 month of the start of smoking cessation.

Critical Analysis

Assisting patients with smoking cessation is defined by the guidelines published by the HHS (2008). *Assisting* patients with the three methods: brief counseling, medications, and referred counseling, means that all three methods should be implemented with a patient. While all three methods are individually effective, their greatest efficacy comes when they are combined as a triad.

While there has been an increase in the number of providers who are *asking* and *advising*, there is a drop off when looking at the number of providers who are *assisting*

(Meredith, Yano, Hickey, & Sherman, 2005). A study of primary care physicians in Kentucky found that 91% of physicians reported that they were *asking* if their patients smoke, and 93% were *advising* their patients who smoked to quit (Longo et al., 2006). When it came to *assisting*, approximately 63% provided brief counseling, 74% recommended medications, and only 28% directed their patients to referred counseling. Similar results were noted in the study by Chase, McMenamin, and Halpin, (2007).

A study by Weber et al. (2007) shows that smokers want interventions from their providers to help them stop smoking. While the demand is there for smoking cessation, studies like the one done by Cokkinides, Ward, Jemal, and Thun (2005) show that smokers are not getting the support and treatment they need. Some reasons that smokers are not getting the Five As include the view by providers that the discussion of smoking cessation is too time consuming or ineffective, and that providers have poor knowledge of the current smoking cessation guidelines (Steinberg & DeInevo, 2007; Vogt, Hall, & Marteau, 2005).

There are interventions that can help increase the implementation of the Five As by providers. Rothemich et al. (2008) showed that documentation of a smoker's health status in an electronic health record led to higher compliance of *ask* and *advise* by providers. Feedback and monetary incentives led to higher rates of implementation of *asking* and *advising* in a study done by Bentz et al. (2007).

Significance to Nursing

Nurse Practitioners are assuming a greater role as patients' primary care providers. The majority of patients who are smokers and have a NP as their primary care provider will see their NP at least once a year. The NP can introduce the idea of

smoking cessation at these visits. Smokers are being identified; however, more can be done. In order to promote smoking cessation, the most current clinical guidelines indicate that the Five-As approach should be used (HHS, 2008). These are specific interventions that nurse practitioners can use to help their patients who are smokers achieve a higher level of wellness.

The smoking cessation guidelines released by the HHS in 2008 represent the most comprehensive and up to date recommendations available. This current study will shed light on providers, some of whom are nurse practitioners, and show how they are implementing brief counseling, medications, and referred counseling for smoking cessation.

Problem Statement

Previous studies have shown a gap between providers *asking* patients if they are smokers and *assisting* patients to achieve smoking cessation (Browning, Ferketich, Salsberry, & Wewers, 2008; Chase et al., 2007; Longo et al., 2006; Thorndike, Rigotti, Stafford, & Singer, 1998; Ward et al., 2002). In 2008, HHS released updated guidelines in regards to smoking cessation. These guidelines outline the importance of following the Five-As and provide evidence and rationale for their implementation. While guidelines are implemented so that providers consistently use best practice methods, not everyone follows guidelines. No studies have been published looking at provider practices post implementation of these guidelines.

Purpose

The purpose of this study was to document the *assess* aspect of the Five As approach. The researcher explored what providers are doing in their daily interactions with patients who smoke. The current study determined that providers are implementing all three methods of *assisting*: brief counseling, medications, and referred counseling.

Research Question

How do providers *assist* their patients with smoking cessation?

Definitions of Terms

Conceptual Definitions

Primary Care Provider: A healthcare provider who is the primary source of medical advice for a patient (Meredith et al., 2005).

Assist: To give support or aid (Merriam-Webster, 2008).

Patients: Individuals seeking medical care (Meredith et al., 2005).

Smoking Cessation: The process of a smoker discontinuing smoking (Steinberg & DeInevo, 2007).

Smoking Guidelines: A set of treatment recommendations designed to help providers deliver care in a more efficient and consistent manner (Chase et al., 2007).

Operational Definitions

Primary Care Provider: An individual who is a nurse practitioner or physician assistant, whose area of practice is either internal medicine or primary care.

Assist: Assist includes using brief counseling, pharmacological methods, and referred counseling.

Patients: People who present to a provider for a healthcare visit who are identified as a smoker, and express a willingness to engage in smoking cessation.

Smoking Cessation: An attempt by the patient to quit smoking.

Smoking Guidelines: The use of the Five- As by a primary care provider.

Assumptions

1. Providers will be honest when completing the survey.
2. When providers implement the Five-As, smokers progress to a higher level of wellness.

Chapter Summary

In 2008, HHS released guidelines for treatment of smoking cessation. The framework of the Five-As help providers *assist* their patients with smoking cessation. This study focused on *assist*. While there is a plethora of literature on the topic, no research has been published after the 2008 update. The purpose of the study was to look at how providers are *assisting* their patients with smoking cessation. This is of significance to nursing because many NPs are primary care providers. The study may show if NPs were using the most up-to-date methods available to help their patients achieve a higher level of wellness. In this chapter, terms were conceptually and operationally defined. Assumptions of the study were listed.

CHAPTER II

THEORTICAL FRAMEWORK AND LITERATURE REVIEW

Introduction

In this chapter, the researcher introduces and describes the theoretical model and places the model in context through the use of a case study. Next is a review of literature, and finally, there is a summary of the chapter.

Theoretical Framework

The theoretical model chosen for this study is Prochaska and DiClemente's Transtheoretical Model (1995). The Transtheoretical model describes the process and activities a person goes through when making a change in their behavior. This model has been used to describe how people stop destructive processes such as smoking, alcohol abuse, and overeating. The Stages of Change are the main aspect of the Transtheoretical Model. There are five Stages of Change as defined by Prochaska and DiClemente (1995).

1. Precontemplation. Precontemplation is the first stage. At this point the person does not want to acknowledge that they have a problem. They have no immediate desire for change and will resist change.
2. Contemplation. In the contemplation stage, the person acknowledges that they have a problem. Many have plans to take action towards their behavior in the next 6 months. They may be aware of the problem and the need to change, but are not quite ready to change. This doubt may be the result of the perceived cost of changing.

3. Preparation. At the stage of preparation, people are planning to take action within the next month. While starting to change may be imminent, the person must still resolve issues holding them back from change.
4. Action. Action is where change has occurred. People have moved past their roadblocks to change and have made the leap. To others, this is the most visible stage of change. If the change is maintained by the person, this stage lasts 6 months.
5. Maintenance. The final stage is maintenance. The goal of this stage is to focus on the goals obtained and to prevent lapses and relapse. Without a strong commitment to maintenance, relapse will occur.

The Five-As model incorporates the Stages of Change model. Consistent use of *ask*, *advise*, and *assess* may help a smoker at *Precontemplation* progress through to *Action*. *Assist* correlates with helping when a smoker decides to move from the stage of *Preparation* to *Action*. *Assisting* would not be effective with someone who is still in the *Precontemplation* stage. Providing the right interventions at the right time may help the smoker become an ex-smoker. In addition, in order to accept interventions from a provider, a smoker has to be at a stage where they are willing to accept and implement the intervention. If they are not at a Stage of Change that will accept the intervention, then the intervention may well be ineffective.

Case Study Application

Background

Jerry G. is a 45-year-old male. He has been a pack-a-day smoker for the last 30 years. He has tried to quit in the past, mainly so that his wife and kids would stop

nagging at him. He had never sought assistance to quit but would quit "cold turkey." He could not stay abstinent for more than a couple of days at a time. His friends, family, and healthcare provider told him constantly about the dangers of smoking, but he felt great. He had thought about quitting, but it was hard work to quit, and he liked to smoke. At this point, Jerry is in the stage of Contemplation; he has acknowledged that he has a problem, but it seems too hard to make a change yet.

Application

Something changed last month when Jerry went to the hospital. He had been feeling run down over the last couple of days and thought he had a cold. After the tests came back, Jerry found out that he had pneumonia. He was hospitalized for 3 days while he received IV antibiotics. This was the first time Jerry was ever in the hospital. The doctors told him that the pneumonia was the result of his smoking habit. An introspective Jerry contemplated why he needed to smoke and what effect it was having on him and the people he loves. While he was sitting in his hospital bed with his family at his side, Jerry finally realized that smoking was going to kill him. Throughout this hospitalization, Jerry was moving from *Contemplation* to *Preparation*. He made a vow to quit that day. Today he goes to his healthcare provider so they can form a plan to help him quit for good. By taking the action of going to his healthcare provider, Jerry is progressing from *Preparation* to *Action*.

Literature Review

Application of the Five-As

Molyneux et al. (2003) conducted a study comparing nicotine replacement therapy (NRT) and brief counseling, brief counseling by itself, and minimal intervention

to smokers for smoking cessation. Minimal intervention consisted of recording the smokers' smoking status and no further intervention. This study addressed two aspects of *assist*, brief counseling and medications. A total of 274 smokers, who were being admitted to the hospital as pre-surgical patients, were recruited to participate in the study. The smokers were randomly assigned to three categories: usual care (n = 92), counseling alone (n = 91), and NRT and counseling (n = 91). Random assignment was used. Assessment of smoking cessation was done by carbon monoxide measurement at discharge, 3 months, and 12 months. A chi-squared test and risks ratios were performed on the data. Intent to treat was used.

The study showed at 12 months the NRT with counseling group had double the amount of sustained abstinence (15%) than the minimal intervention group (7%) and the brief counseling group (5%). The researchers also used a self-report that showed similar findings between groups. It was the conclusion of the researchers that NRT plus counseling is an effective method of promoting smoking cessation. In their study, it was shown that counseling was as effective as usual care. There are several deficiencies in this study. While group assignment was random, some participants chose to be in different groups, which negates the power of randomization. A power analysis concluded that an adequate sample size would be 540 participants in each of the three groups. The study fell well short of this. Finally, because the study looked at smoking status at 12 months post discharge, attrition took its toll on the study. Out of the original 274 participants, only 112 completed the study. Also, there was no intervention group that had just NRT; it is unknown if the effectiveness of the NRT plus counseling group is due to just the NRT.

The purpose of another study was to assess the effectiveness of telephone counseling versus brief counseling (An et al., 2006). Five Veterans Administration (VA) sites in the upper Midwest were selected as sites for the study. Inclusion criteria included daily smokers who visited their primary care physician (PCP) in the last year, were willing to quit in the next month, and were not currently using a smoking cessation method. A total of 68,903 people were identified for the sample, with 838 agreeing to participate who met the eligibility criteria. Subjects were randomized to two groups, the standard care group (n = 420) and the telephone care group (n = 418). The standard care consisted of self help materials mailed to the patient and smoking cessation methods available from their PCP. The telephone intervention group consisted of a total of seven calls over a 2-month period. Additional calls could be made to the participant at the counselor's discretion. The telephone group was also encouraged to use medications to help with smoking cessation. If the participants agreed, smoking cessation medications were mailed to them. Data was obtained at 3 months and 12 months by collectors blinded to the participant's intervention group. The researchers analyzed self-reports of smoking cessation, specifically if the participant was abstinent for the last 7 days and abstinent for 6 months.

Researchers analyzed using a chi-square test. There was attrition of 58 participants in the telephone group and 64 participants in the control group. Intent to treat was used except for the participants who died during the study's undertaking (16) and one participant who withdrew from the study and did not want their data included. The attrition from death was distributed evenly between the groups. At 3 months, 39.6% of the participants were abstinent for 7days in the telephone group and 10.1% were abstinent in the control group. At 12 months, 21.6% of the telephone group had been

abstinent for the last 7 days and 15% had been abstinent for the control group. Thirteen percent of the telephone group's members were abstinent for 6 months, while 4.1% of the control group was abstinent for 6 months, a statistically significant result. It was the conclusion of the researchers that telephone intervention produced higher rates of smoking cessation than standard care interventions provided by physicians. Limitations to this study include its predominately White, male sample. Another limitation identified was the fact that the telephone group had medications (some prescription) mailed to them. This is not a standard practice in most telephone counseling lines and may have contributed heavily to the results of the study.

One of the purposes of the analysis of the 2000 National Health Interview was to describe the use of tobacco cessation methods (Cokkinides, Ward, Jemal, & Thun, 2005). A total of 32,374 people were surveyed (72% response rate). A sample 4,091 of those surveyed were identified as smokers (smoked greater than 100 cigarettes in lifetime) who had tried to quit for greater than 1 day in the past year. Of these, 890 were people who had quit smoking in the past year. Ninety-five were missing information and were excluded from the analysis. The questions analyzed from the study included cessation methods used, healthcare provider's advice to quit smoking, and the participants' insurance status.

Logical regression was used to determine whether the predictors of interest were associated with use of cessation aids among the smokers. Only 22.4% of the smokers had used any sort of cessation aid in the last year. A pharmacological method was used by 22% of the participants, and 1.3% of the participants had used behavioral counseling. Pharmacological methods included prescription and non-prescription medications. Of the sample, 3,010 of the smokers had seen their healthcare provider in the last year,

with 61.8% receiving advice to quit. There was a correlation between provider advice to quit smoking and use of cessation aids. Those who smoked more than 21 cigarettes a day were more likely to use cessation aids. Limitations in this study include self-reporting of data. The study was not geared specifically towards smoking cessation and some of the questions could have been expanded to include more data.

Patient Preference

The National Youth Smoking Cessation Survey (NYSCS) analysis showed the lifetime smoking cessation methods of youths aged 16 to 24 years (*Morbidity and Mortality Weekly Report [MMWR*], 2006). Included in the study were youths in the age range who had smoked at least 20 cigarettes in their lifetime and at least one cigarette in the last 30 days. A computer randomly selected telephone numbers in the United States. A total of 85,000 households were contacted and 60% responded. A total of 21.4% had a smoker aged 16 to 24 years of age. A $20 stipend was offered as an incentive to complete the study. A total of 2,582 people participated in the study, representing 69.6% of the eligible smokers called. They were then polled and asked about specific utilized quitting methods. Quitting methods were broken down into two categories -- assisted and unassisted. Assisted methods included interventions recommended by a healthcare provider, medications, and counseling. Unassisted methods included items such as cutting down the number of cigarettes smoked, quitting with a friend, and switching to chewing tobacco, among others.

Descriptive statistics were used to analyze the data. The most popular methods for quitting among this age group were unassisted methods. The three most popular methods were (a) cutting down on smoked cigarettes (88.3%), (b) stop buying cigarettes (56%), and (c) exercising more (51%). The three most popular assisted methods were

(a) talking with a health professional (20.1%), (b) nicotine gum (17.4%), and (c) nicotine patch (16.2%). Switching to chewing tobacco (10.1%) was more popular than all but 3 out of the 13 assisted methods. The article outlined the need to develop specific strategies to address smoking cessation needs in this age group.

Weber et al. (2007) studied whether smokers with different interests in smoking cessation hold certain attitudes and different experiences related to trying to quit smoking. Out of a list of 600,000 members of a consumer mail panel, a stratified random sample of 2,810 was surveyed by mail. Blacks and Hispanics were oversampled to ensure representation. There was a response rate of 65%. The instrument assessed the participants' attitudes and interactions with the healthcare system, perceptions of the role of PCPs in disease prevention-oriented behavior-change, and their preferred method of receiving counseling. Data was collected on the participants' current smoking, cessation efforts, and their overall health. A subsample of 431 respondents, 30 years old and over, was analyzed. These were respondents who identified themselves as smoking at least one cigarette in the last 30 days.

Three groups of smokers were identified: low demand group (LD) (n = 176), medium demand group (MD) (n = 90), and high demand group (HD) (n = 137). They were stratified based on how they rated their interest in smoking cessation, with LD being the least interested. A total of 28 participants were not analyzed due to missing data. Chi-square analysis was done on the categorical measures. Differences in the continuous measures were analyzed with Student-Neuman-Keules tests. A regression analysis was performed to examine the combined influence on all of the measures of interest in smoking cessation. The data showed differences between the HD, LD, and MD groups. The HD group consisted of heavy smokers who acknowledged that

smoking is harmful to their health and have made quitting a priority. This group is the second most confident in their ability to quit and the group that held the healthcare provider in highest regard as a credible information source. They were also the group that desired counseling (73.3%), referral to an expert (62%), and prescription assistance (48.1%), the highest out of the three groups. The MD group also consisted of heavy smokers, but they had the least confidence in their ability to quit out of the three groups, and thus placed a low priority in quitting. While they acknowledge the negative health aspects of smoking, they were unwilling to take action to stop smoking. The LD group was the group that smoked the least and had the highest confidence in their ability to quit smoking. However, over 70% of this group did not rate quitting a priority. They rated the health information sources they would use and types of counseling desired, lowest across the board. Out of the categories of health information sources that the participant would use, the four highest rated by all three groups were -- doctor (78.9%), family (59.7%), books (57.1%), and nurse/physician's assistant (56.7%). With types of smoking cessation assistance desired, the three groups combined rated advice/counseling at 55.7%, referral to expert at 46.3%, and prescription at 35.4%. Out of the three groups, the HD group rated health information sources that they would use and types of counseling desired the highest, followed by the MD and LD groups. Although not noted in the article, one could glean insight into the differences shown by the three groups and their potential Stage of Change. The authors discussed tailoring specific interventions to target each of the three groups. Limitations of the study include the sampling methods used. The authors suggest doing qualitative research to explore the attitudes and beliefs of these three groups.

Provider Implementation and Viewpoints

Boldemann, Gilljam, Lund, and Helgason (2005) researched viewpoints of general practitioners (GP) on smoking cessation after the implementation of a nationwide quit-line in Sweden. Using a Likert scale questionnaire, a cross-sectional survey was sent to 1,000 random GPs. The results of this were compared to a similar study done in 1999 just after the quit-line had become active. The purpose of the study was to assess what methods providers were using for smoking cessation and to compare the viewpoints of 2003 with 1999 when the quit-line was still new. Out of the 1,000 GPs surveyed, 64% completed the study, similar to the 1999 study.

Relative risk was used as the statistical measure. There was a decrease in the feeling among GPs that smoking cessation was not worth the effort due to lack of results in 1999 (45%) versus 2003 (39%). There was an increase in the percentage of GPs who preferred to refer to counselors for smoking cessation: 82% in 1999 versus 90% in 2003. Interestingly, there was an increase in the percentage of GPs who felt they lacked knowledge in smoking cessation from 1999 (31%) to 2003 (75%). The authors did not give an explanation. GPs who referred their patients to the national quit-line were more likely to offer other methods of smoking cessation support. This trend was seen over several other smoking cessation support methods. The researchers concluded that knowledge of smoking cessation methods had increased in Swedish GPs from 1999 to 2003, and that the telephone quit-line was a positive influence. Limitations to the study included that while the researchers concluded that the quit-line was having a positive effect, their data showed that only 25% of GPs had referred a patient to the quit-line in the last month. Response bias also needs to be taken into account.

Researchers did a secondary analysis of the 2001 National Health Interview Survey (NHIS) (Browning et al., 2008). The purpose was to discover how people of a lower socioeconomic status were receiving smoking cessation input from their providers. The NHIS is a survey conducted annually by the Census Bureau. Members of the Bureau go to households and survey families, selecting one adult over the age of 25 to participate. The 2001 data set included information from 100,761 people. Of this sample, data were analyzed from 3,046 people who were identified as current smokers, had seen a healthcare provider in the last 12 months, and had been *advised* by the healthcare provider to quit smoking, and had reported receiving assistance to quit from the provider. The researchers were interested in how those of a lower socioeconomic status received care. Three classifications of disadvantage were created (low, medium, and high) based on several factors including income, health insurance, and education level. The most disadvantaged were classified as high.

Researchers used descriptive statistics and univariate odds ratio. Thirty-eight percent of the people received assistance to quit smoking. Those who were of a higher socioeconomic status, married, and those who smoked 11 or more cigarettes a day were more likely to receive assistance. Those with a low disadvantage rating were more likely than those with medium and high ratings to receive assistance. Blacks were shown to have the lowest amount of smoking assistance when compared to other ethnicities.

An analysis was conducted of the Behavioral Risk Factor Surveillance System (BRFSS) (Denny, Serdula, Holtzman, & Nelson, 2003). The authors researched the number of self-reported smokers who were *advised* to quit by their healthcare provider. The BRFSS is a random digit dial telephone survey. Smokers in this study were over 18 years of age, currently smoking, and had smoked over 100 cigarettes in their lifetime.

Out of 26,629 respondents, 6,315 met these criteria. The participants were asked whether they had ever been *advised* to stop smoking, and if yes, how long ago it was.

An adjusted odds ratio was used to analyze the data. Researchers found that 70% of the smokers stated that they had been *advised* to quit in the last 12 months by a healthcare provider. Women were *advised* more than men, and that *advice* increased with age.

Chase et al. (2007) analyzed data obtained from the Center for Health and Public Policy Studies (CHPPS). In 2002, the CHPPS conducted a survey of smokers on Medicaid in three states. This was done using a random dial telephone interview process across three states in areas that were deemed to have high rates of Medicaid enrollees. Inclusion criteria for the study were 18 to 64 years of age, current smokers, and recent quitters. Current smokers were those that had smoked greater than 100 cigarettes in their life and smoked every day or some days. Recent quitters were former smokers who quit in the last year and had not had a cigarette for the last 7 days. The final inclusion criterion was that the person was currently enrolled in Medicaid. A total of 18,830 households were contacted, with a final sample of 820 agreeing to participate in the study. For analysis, researchers used a subsample of 586 who were smokers and recent quitters and who had visited their healthcare provider in the past year. Questions for the study revolved around the Five-As, specifically whether the provider had implemented each of the Five-As with the participant in their most recent visit.

Data analysis used chi-square tests to assess differences in explanatory variables (i.e. gender, age, race, ethnicity, and health status). Logical regression was then performed to establish a relationship between the demographic data and provider delivery of the Five-As. The following is a breakdown of how the participants reported

receiving the Five-As in their visit to their provider in the last year; 87% *asked*, 65% were a*dvised*, 51% were *assessed*, 24% were *assisted*, 13% were *arranged*, and 9% reported receiving all Five- As. While women (89%) were *asked* more than men (82%), it was noted that men (44%) were *assisted* more frequently than women (33%). Blacks (52%) were less likely than their White (63%) and Hispanic (56%) counterparts to be *assessed*. The researchers concluded that there was a significant difference in the way that White smokers were treated versus their Black counterparts, with Whites receiving more of the Five-As. Limitations of this study include whether the analyzed sample was truly representative of the Medicaid smokers living in the four states. There was a poor response rate (33%) to the survey. Also, one must take response bias into effect because of the self-reporting nature of this study. There was no confirmation of the participants' responses with a documented medical record.

Thorndike et al. (1998) analyzed the National Ambulatory Medical Care Survey to determine trends in the treatment of smokers by U.S . physicians. Inclusion criteria included being a Doctor of Medicine (MD) or a Doctor of Osteopathic Medicine (DO). Physicians were identified as either primary care or specialists. For 5 years, physicians were randomly selected and filled out a 1-page form on each ambulatory care patient they saw over the course of a week. There was an overall response rate of 72% by the physicians selected. In total, 3,254 physicians responded, and data were gathered on 145,716 patient visits. Demographic information on race and insurance was obtained. Three outcomes were measured: identification of smoking status, provision of smoking counseling, and reporting of nicotine replacement therapy (NRT) use. The presenting problem for the visits was also obtained.

Logical regression was used to weigh identification of smoking status, counseling, and NRT use. Smoking status was identified in 66% of the recorded visits, with counseling being offered at 22% of the visits, and NRT was given at 1% of the visits. The data showed that PCPs were better at engaging in identifying, counseling, and offering NRT than their specialist counterparts. A correlation was also found between the type of visit and the likelihood that smoking was addressed. Smoking-related diagnoses, such as pulmonary diseases, diabetes, heart disease, and alcohol and drug abuse, were much more likely to receive smoking counseling than diagnoses unrelated to smoking. One of several limitations is the age of the study. At that time, the Five-As had yet to be implemented. Nicotine replacement therapy consisted of nicotine gum and nicoltine patch, and both were prescription. Since physicians were recording the data, there could be a response bias; but based on the overall data, this is unlikely. The study is older, but shows the trend that providers may *ask* and *advise* yet are less likely to engage in the other Five-As.

Steinberg and DeInevo (2007) conducted a mailed survey to describe general practitioners, internists, and family practice physicians' beliefs regarding the effectiveness of tobacco treatments. A total of 336 (60.3%) responded from 557 eligible physicians. The survey measured demographic data, tobacco training, and perceived effectiveness of treatments, including pharmacologic and behavioral. The perceived effectiveness was measured on a Likert scale as not effective, minimally effective, somewhat effective, and very effective.

The demographic data and perceived effectiveness scores were analyzed using a chi-square test. The following percentages are the number of physicians who perceived the treatment as somewhat effective or very effective. The physicians

perceived that combination medications were the most effective regimen (89%). *Bupropion* was a close second at 88%. As far as NRT, the percentages were lower than combination medications and prescription medications. They were ranked in order of: patch (74%), gum (56%), inhaler (55%), and nasal spray (50%). Nonpharmacologic methods were ranked in the order of: behavioral counseling (70%), group treatment (67%), telephone counseling (25%), and internet counseling (23%). While these scores reflect the combination of the Likert scale items somewhat effective and very effective, when somewhat effective is removed, the highest ranked item continues to be combination therapy, but only 34% perceived it as very effective. The three highest items are combination therapy, *bupropion*, and the patch. There is much less support for nonpharmacologic methods and the other forms of NRT. Limitations to this study include the low response rate and it was limited to physicians in a specific geographical region. Also since the study began, the medication *varenicline* and nicotine lozenges have come onto the market.

Longo et al. (2006) conducted a study looking at the attitudes of 618 Missouri family practice or internal medicine PCPs towards the smoking cessation guidelines. With 346 responding (56%), this satisfied a power analysis that was conducted prior to the study. The questionnaire that was developed looked at several items, including awareness of guidelines, agreement with the intent of the guidelines, guideline adoption, and guideline adherence. A specific area of the instrument questioned how the physicians were implementing the Five-As.

Logical regression identified the significant variables associated with each step of the model. Estimated odds ratios and confidence intervals were developed for physicians that reported being aware of the guidelines. Sixteen percent of the

physicians polled were unaware of the guidelines. Approximately 55% of the physicians agreed with the guidelines. When the family practice and internal medicine physicians' data are combined, it is noted that 91% of physicians *ask* about smoking status. *Advise* had a 93.5% compliance, *assess* has 76.5% compliance, and *assist* had 74% compliance. Finally, *arrange* scored the lowest with only 37%. While overall agreement with the guidelines may be 55%, the majority of the physicians were engaging only in the first three of the Five-As. There was a steady decline with *assist* and *arrange*. Limitations to this study included the low response rate and a possible self-report bias.

Ward et al. (2002) conducted a study to assess the knowledge of attitudes towards, and compliance with, the Public Health Service's (PHS) smoking cessation guideline. Physicians working for the Veterans Administration (VA) were mailed a survey. The VA was chosen because they had implemented the PHS guidelines 2 years earlier. Out of 1,747 physicians, 879 responded to the survey (50.3%). Researchers used a Likert scale assessing the physicians' familiarity with the guideline, whether they agreed with the guideline, complied with the guideline, and thought the guideline was effective.

Approximately 44% of the physicians polled responded that they were unfamiliar with the guideline; 62% of the physicians reported not receiving any sort of training on the guideline; and more than 40% of those polled did not know if they agreed with the guideline, complied with the guide, or whether it was effective. While lack of knowledge regarding the guidelines is noted, many of the physicians were engaging in activities that were consistent with guidelines. Over 85% polled engaged in *asking* and *advising*. The results of how they *assist* were somewhat skewed. Over half (57%) reported constantly referring to smoking cessation programs. Prescriptions and NRT numbers were less

than 15%. A reason for this may be the fact that the VA has limited NRT and prescription drugs to those who are enrolled in a smoking cessation program. The researchers stated that while overall guideline knowledge may be low, the physicians are still adhering mostly to the guidelines. Limitations of the study included the low percentage of those that responded and possible response bias. Because the VA limited prescriptions and NRT to those involved in a smoking cessation program, this may have increased the numbers of those who referred to counseling and decreased the numbers of those who gave NRT or prescription medications

Vogt et al. (2005) conducted a systematic review to estimate the proportion of general practitioners and family practitioners with negative beliefs and attitudes about discussing smoking cessation with their patients. The data were collected by using electronic databases and by retrieving sources from the bibliographies of specific articles. Studies were limited to those that included family practice and general practice, and written in English. Studies that just used the term primary care provider were excluded because they were not specific enough. A multitude of other specific inclusion criteria were listed. Out of the 2,176 studies that were identified, 20 were used from 11 different countries.

The data were analyzed using descriptive statistics. The most noted negative belief was that smoking cessation methods were too time-consuming (42%), followed by smoking cessation methods were not effective (38%). The third most prevalent category was no confidence in ability (22%). The least prevalent category was not appropriate (3%). While over half of the physicians did not hold negative viewpoints towards smoking cessation, a large minority did. When those negative viewpoints are identified, then strategies can be implemented to help address those negative viewpoints. The

authors stated that the heterogeneity of the studies was a limitation, and the lack of articles meeting their inclusion criteria resulted in needing articles from all over the globe. While not addressed by the authors, the fact they excluded articles that used the term primary care providers could have led to their lack of results. With a larger sample they may have experienced less heterogeneity.

Procedures to Increase Compliance of the Five-As

Rothemich et al. (2008) conducted a study to determine whether recording smoking status as a routine vital sign would increase smoking cessation counseling. This intervention was conducted in a group of clinics in Virginia. The providers in these clinics were physicians, NPs, and PAs who specialize in primary care. A total of 18 practices were identified and randomized into two equal groups -- one the intervention group and the other the control group. The intervention group's support staff and nurses received education on how to *ask* every patient about their smoking status and add a stamp to the chart with the patients' smoking status. The control clinics were instructed to continue their usual procedures and not to implement any new smoking cessation strategies. The data collection was done by research assistants (RA) who would interview the patients as they left the clinic. These RAs would be at clinics randomly when at least two providers were present. The survey given to the patients as they left asked whether they were *asked* if they smoked, and if they did smoke, which, if any, of the Five-As they received during that visit.

Logical regression sorted the variation among practices, variation among clinicians within practices, and the variation among a clinician's patients. The percentage of smokers who received *ask* at the intervention clinics was 66% compared to 26.3% at the control clinics. There was also a significant difference of the percentage

who stated they were *advised* in the intervention (59.9%) versus the control (53.4%). The remaining Five-As showed a decrease compared to *ask* and *advise* in the intervention (32.5%) and the control (29.3%). The authors concluded that adding smoking status as a routine vital sign increased *advise* but did little to increase the rest of the Five-As. A major limitation of the study is that it relied on patient reporting of receiving smoking cessation counseling, a possibility of response bias. Another limitation of the study could have been the Hawthorne effect if the providers knew that the RAs were onsite.

Bentz et al. (2007) studied the effect of giving feedback to providers on their delivery rate of tobacco assistance and referral to a state wide quit-line. This was assessed by documenting the Five-As in an electronic health record (EHR) and providing feedback to the providers based on the results of their efforts. The sample was 19 clinics in a health system in Oregon. Using random assignment, there were 9 control clinics and 10 intervention clinics. All clinics EHRs were updated to allow charting of specific interventions of the Five-As. In the intervention group, providers were given feedback that tracked their progress in documenting the Five-As and compared them to other providers. An automatic referral to the quit-line was also incorporated into the EHR. One set of outcome measures for the study included documentation of the Five As, the other was the amount of patients referred to the quit-line.

Data analysis was conducted using *t* tests for continuous variables and chi squared tests for categorical variables. The results of the study showed that the intervention group had higher documentation of the Five-As than the control group. The *assist* rate for the intervention group (20.1%) was nearly double that of the control group

(10.5%). Although not a point of focus by the researchers, there was a decline in the percentage of providers implementing each successive A. There was no difference between the groups regarding referral to the state quit-line. The researchers concluded that providing feedback to providers on how well they are documenting smoking cessation strategies increases the documentation of those strategies. A limitation to this study was that the data for the quit-line were skewed due to funding being revoked during the study. This meant towards the end of the study, there was no state quit-line for referral.

Chapter Summary

The Stages of Change model was used as theoretical framework for this study (Prochaska et al., 1995). The specific act of *assisting* is relatable to helping a smoker take the step from *Preparation* to *Action*. By facilitating action and making this process easier for the smoker, it is hoped that the smoker will progress to the maintenance phase.

The literature review provided information on different treatments to help *assist*. It showed the efficacy of brief counseling, NRT, and telephone counseling as referred counseling. People quit smoking without seeking medical advice. Even with the multitude of different assisted methods available to stop smoking, it was shown that most people were using unassisted methods, such as quitting cold turkey and cutting down. Providers consistently address the first two of the Five-As, but as one advances to As 3 to 5, the number of providers implementing these strategies decreases sharply. Negative attitudes associated with smoking cessation included that it takes too much

time and that it is not effective. There are also novel approaches that healthcare systems can implement in order to increase provider feedback with the Five-As.

CHAPTER III

METHODOLOGY

Introduction

The researcher studied whether providers are implementing all three methods of *assisting* - brief counseling, medications, and referred counseling. In this chapter, the author addresses the design, population, sample, setting, instruments, collection procedures, analysis procedures, and limitations.

Study Design

The design of the study was descriptive and correlational. A Likert scale survey instrument was used to elicit what methods providers used to help *assist* their patients with smoking cessation. While there has been a sizeable amount of prior research done in this field, no research has been done after the recent update of the HHS (2008) guidelines.

Population, Sample and Setting

The target population was NPs and PAs who work in primary care (family practice and internal medicine). A convenience sample of PCPs, of any age or experience, was obtained from this population. The accessible population was providers who work in a particular healthcare organization in the Midwestern United States. This survey was accessible to the sample using *Survey Monkey* by clicking on a hyperlink in an email, allowing the participant to complete the survey any time and place that there was a computer with internet access.

Data Collection Instrument

While there are many instruments that have been used to elicit providers' compliance with guidelines and the Five-As in general, there is no available instrument specific to *assist*. The researcher-developed instrument consisted of two parts, a demographic section and a Likert scale survey (Appendix A).

The Survey

The first question of the survey, "Is your primary job providing primary care to patients?" ruled out anyone who was not a PCP. If the subject answered yes, they were allowed to continue with the survey; if not, they were thanked for their time and the survey terminated.

The demographic section of the tool included: gender, type of provider (NP or PA), primary focus (family practice, internal medicine, other), whether the provider is a smoker or was a former smoker (yes, no), years of practice (0 to 4 years, 5 to 9 years, 10 to 14 years, 15 to 19 years, 20 years or greater). There were a total of nine Likert-type questions. These questions assessed how the provider is *assisting* their patient. Three questions each dealt with brief counseling, medications, and referred counseling. After these questions, was a question asking whether the participant is familiar with the 2008 smoking cessation guidelines (yes, no).

Following IRB review and approval from the University of Wisconsin Oshkosh and the healthcare institution, the survey was available over the internet. An email explaining the study was sent to providers' work email addresses by an executive assistant in the healthcare organization who had access to the providers' email addresses. Included in that email was a hyperlink to the study's webpage. There was a

description of the study in the initial email, including the purpose and design of the study, an approximate time frame for completing the study, a list of potential risks to the subject, provisions for protecting the anonymity of the subject, and the researchers contact information. If the provider completed the survey, they were agreeing to the terms of the study.

Data Collection Procedures

Data collection took place over a total of 3 weeks. Since the study was conducted through a website (www.surveymonkey.com), the subjects were anonymous. There were no identifying questions on the survey other than basic demographic questions. The data were accessed only by the researcher and his chair. Completion of the instrument took approximately 15 minutes or less.

Data Analysis Procedures

Data were analyzed by descriptive statistics. The web-based survey saved the results into Excel spreadsheets, cutting down substantially on the risk of transcription errors when analyzing the data.

Limitations

1. Utilization of a researcher-created tool brings into question its reliability and validity.
2. Response bias could limit the validity of the findings, because providers may answer how they think they should be practicing rather than how they actually practice.

3. Convenience sampling decreases the generalizability of the findings.
4. Sample size may decrease the generalizability of the findings.

Chapter Summary

The preceding chapter discussed how the descriptive study was undertaken. The population was primary care providers. The sample was from a healthcare organization in the Midwestern United States. IRB approval was obtained from the university and healthcare organization. The instrument used was researcher-created. Data collection was anonymous, and descriptive statistics were used to analyze the data. Limitations to this study were discussed.

CHAPTER IV

FINDINGS AND DISCUSSION

The researcher analyzed the demographics of the sample -- nine questions regarding how the providers *assist* with smoking cessation and whether the provider had read the AHRQ's 2008 update of the smoking cessation guidelines. A summary of the findings follows.

Description of Sample

The survey was distributed to approximately 150 nurse practitioners and physician assistants employed by a healthcare organization in the Upper Midwest. Out of the approximately 150 invited to the survey, a total of 64 accessed the survey's website. Of this total, 48 completed aspects of the survey. Of those who answered the demographic section, 43 stated that they were a nurse practitioner, and one identified themselves as a physician's assistant. The primary focus of the participant's practice was either internal medicine or family practice.

Demographic Characteristics

The question was asked, "What is your primary focus of practice?" Out of the 48 who completed aspects of the survey, 44 answered this question. Family practice (45.5%) and internal medicine (29.5%) accounted for 75% of the responses. (Table 1)

Table 1

Primary Focus of Practice

What is your primary focus of practice?	Frequency	Percentage
Family Practice	20	45.5%
Internal Medicine	13	29.5%
Pediatrics	3	5.8%
Urgent Care	2	4.5%
Cardiology	1	2.3%
Women's Health	3	6.8%
School Health	1	2.1%
Endocrinology	1	2.1%

Out of the 48 who answered, 44 provided the length of time that they have been practicing. The provider chose from five categories. These most represented categories were: 0 to 4 years (29.5%) and 10 to14 years (29.5%). (Table 2)

Table 2

Years of Practice

How many years have you been practicing	Frequency	Percentage
0 to 4 years	13	29.5%
5 to 9 years	8	18.2%
10 to 14 years	13	29.5%
15 to 19 years	3	6.3%
20 years or greater	7	14.6%

Table 3

Likert Questions

Question	Never		Rarely		Sometimes		Always		Number
I refer patients to a telephone quit-line	6	12.5%	4	8.3%	23	47.9%	15	31.3%	48
When my patients are ready to quit smoking, I help them develop a quit plan.	0		1	2.1%	9	19.1%	37	78.7%	47
I write from prescription medications for smoking cessation.	6	12.5%	5	10.4%	25	25.1%	12	25.0%	48
I refer patients to smoking cessation programs.		19.6%	12	26.1%	16	34.8%	9	19.6%	46
I recommend nicotine replacement therapy (NRT) for patients.	2	4.3%	5	10.9%	32	69.6%	7	15.2%	46
When I recommend medications, it is a combination of prescription and nicotine replacement therapy (NRT)	10	21.7%	6	13.0%	30	65.2%	0		46
I review with patients the potential challenges they may face.	0		0		6	13.3%	39	86.7%	45
I provide brief counseling to patients when they are ready to quit.	0		0		1	2.2%	44	97.8%	45
I refer my patients to experts in smoking cessation.	9	20.0%	0	22.2%	8	40.0%	8	17.8%	45

Out of the 44 who responded to the question, all reported that their gender was female. All who answered stated that they were not a smoker. The final demographic question was, “Have you smoked in the past?” This question was answered by 43 providers. Out of this 43, 10 responded that they had (23.3%).

Likert Questions

A total of nine Likert-style questions were asked to ascertain how the participants were *assisting* their patients with smoking cessation. They were given four choices for each question: *Never*, *Rarely*, *Sometimes*, and *Always*. These questions were developed by the researcher to ascertain answers in three areas: brief counseling, medications, and referred counseling. The questions were analyzed individually based on the answers provided by the participants; then the data was combined with its partner answer. *Never* and *Rarely* were combined for the *no* answer, with *Always* and *Sometimes* combined for the *yes* answer.

Quit-line

All 48 participants responded to the question whether the participant referred patients to a telephone quit-line. The highest response was seen with *Sometimes* (*n* = 23, 47%). When the answers were combined: *Never*/*Rarely* was *n* = 10 (20.8%) and *Sometimes*/*Always* was *n* = 38 (79.2%). (Tables 3 and Table 4)

Quit Plan

Forty-seven of the participants answered the question, “When my patients are ready to quit smoking, I help them develop a quit plan.” The most given response was *Always* (*n* = 37, 78.7%). When the answers were combined: *Never*/*Rarely* was *n* = 1 (2.1%) and *Sometimes*/*Always* was *n* = 46 (97.8%).

Table 4

Likert Questions With Combined Answers

Question	Never/Rarely (No)		Sometimes/Always (Yes)	
I refer patients to a telephone quit-line	10	28.0%	38	79.2%
When my patients are ready to quit smoking, I help them develop a quit plan.	1	2.1%	46	97.8%
I write from prescription medications for smoking cessation.	11	22.9%	37	77.1%
I refer patients to smoking cessation programs.	21	45.7%	25	54.4%
I recommend nicotine replacement therapy (NRT) for patients.	7	15.2%	39	84.8%
When I recommend medications, it is a combination of prescription and nicotine replacement therapy (NRT).	16	44.7%	30	65.2%
I review with patients the potential challenges they may face.	0		45	100.0%
I provide brief counseling to patients when they are ready to quit.	0		45	100.0%
I refer my patients to experts in smoking cessation.	19	42.2%	28	57.8%

Prescription Medications

The third question asked whether the participant wrote for prescription medications. All 48 participants answered the question. *Sometimes* (*n* = 25, 52.1%) was the most common answer for this question. When the answers were combined, *Never*/*Rarely* was *n* = 11 (22.9%) and *Sometimes*/*Always* was *n* = 37 (77.1%).

Smoking Cessation Programs

Forty-six participants answered the question asking whether they referred their patients to smoking cessation programs. *Sometimes* (*n* = 16, 34.8%) was the most common response. When the answers were combined, *Never*/*Rarely* was *n* = 21 (45.7%) and *Sometimes*/*Always* was *n* = 25 (54.4%).

Nicotine Replacement Therapy

The fifth question was, "I recommend nicotine replacement therapy for patients (patches, gum, lozenge, etc)." Forty-six responded to this question. *Sometimes* (*n* = 32, 69.6%) was the most common response. When the answers were combined, *Never*/*Rarely* was *n* = 7 (15.2%) and *Sometimes*/*Always* was *n* = 39 (84.8%).

Mix of Prescription and Non-Prescription

Forty-six participants answered the question asking whether they recommended a mix of prescription and non-prescription medications. *Sometimes* (*n* = 30, 65.2%) was the most frequent response. When the answers were combined, *Never*/*Rarely* was *n* =16 (44.7%) and *Sometimes*/*Always* was *n* = 30 (65.2%).

Quit Attempt

Forty-five participants answered the question asking whether they reviewed potential challenges the smoker might face in their quit attempt. The most common answer was *Always* (*n* = 39, 86.7%). When the answers were combined, *Never*/*Rarely* was *n* = 0 and *Sometimes*/*Always* was *n* = 45 (100%).

Brief Counseling

Forty-five participants answered the question asking whether they provided brief counseling to their patients when they were ready to quit. The most common answer

was *Always* (*n* = 44, 97.8%). When the answers were combined, *Never*/*Rarely* was *n* = 0 and *Sometimes*/*Always* was *n* = 45 (100%).

Experts in Smoking Cessation

The final question asked, "I refer my patients to experts in smoking cessation." Forty-five participants answered this question. *Sometimes* (*n* = 18, 40%) was the most frequent answer. When the answers were combined, *Never*/*Rarely* was *n* = 19 (42.2%) and *Sometimes*/*Always* was *n* = 28 (57.8%).

The majority of the Likert questions were answered by the participants. Out of the 48 participants, there were at least 44 who answered each of the questions. Most of the responses were in the *Sometimes* and *Always* categories.

Agency for Healthcare Research and Quality Guidelines

After the Likert-style questions, the participant was asked, "Have you read the, '*Treating Tobacco Use and Dependence: 2008 Update*' guidelines published by the Agency for Healthcare Research and Quality (AHRQ)?" This was structured as a bimodal question with a yes or no response. Out of the 44 participants who answered this question, 27 answered no (61.4%).

Chapter Summary

The majority of the participants were female nurse practitioners with less than 14 years of experience. Internal medicine and family practice were the main settings. None of the participants were current smokers, yet, some had smoked in the past. There were three questions each on brief counseling, medications, referred counseling.

When analyzing the combined data, referred counseling was the group that showed the least compliance by the participants. When all of the data for the referred counseling questions were combined, the *Never*/*Rarely* category was 36% and the *Sometimes*/*Always* category was 64%. The data for the questions about medications showed more compliance by the participants. The breakdown of the data was *Never*/*Rarely,* 24.6%, and *Sometimes*/*Always,* 75.4%. The brief counseling showed the most compliance by the participants. The differences in data were *Never*/*Rarely* 1.4% and *Sometimes*/*Always* 98.6% (Table 5).

Table 5

Compliance of the Three Methods of Assisting

Question Group	Never/Rarely	Sometimes/Always
Referred Counseling	36.2%	63.8%
Medications	24.6%	75.4%
Brief Counseling	1.4%	98.6%

The question asking about the 2008 update to the AHRQ's smoking cessation guidelines was a fixed-response question. The percentage who had read the guidelines was 38.6%. This means well over half of the participants had not read the current update to the guidelines. This is a large percentage of providers unfamiliar with the most current recommendations on how to treat a condition that affects a large amount of their patient population.

By looking at the data, one could extrapolate that while the providers are not familiar with the AHRQ guidelines, their practice patterns follow mostly what the

guidelines recommend. Based on responses collected, the providers followed the recommendations regarding brief counseling the best. Where the support for the guidelines was the least was shown in the responses regarding referred counseling. Here the responses for *Never*/*Rarely* and *Sometimes*/*Always* were the closest to even. This means that the providers do not follow the guidelines regarding referred counseling as well as they follow the guidelines regarding brief counseling and medications. When looking at the questions regarding referred counseling, one must also consider that the question asking about telephone quit-lines generated a favorable response (*Sometimes*/*Always* 79.2%). This is encouraging because telephone quit-lines are an easy way to provide referred counseling. Unfortunately, referring patients to experts and smoking cessation programs showed a much lesser percentage in the *Sometimes*/*Always* category.

All of the Likert questions received a similar amount of responses. There was a similar amount of responses between the Likert questions and the question asking about the AHRQ guidelines. There was less of a response than to the demographic questions. Since these were located at the end of the study, this may have contributed to a decreased response or a desire not to be indentified by demographic data.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

In this chapter, a summary of the study is given. This is followed by the conclusions the author derived from the study. Implications for nursing practice are presented, as well as recommendations for future nursing research.

Summary

The purpose of this study was to examine what providers are doing to *assist* their patients with smoking cessation. The framework for the study was based on the AHRQ's 2008 smoking cessation guidelines (HHS, 2008). The AHRQ identified three aspects needed to help *assist* patients with smoking cessation: brief counseling, referred counseling, and medications (HHS).

Prochaska's Transtheoretical Model was used as a framework for the study (Prochaska et al., 1995). This framework has been used extensively for smoking cessation. While the framework has been extensively used for smoking cessation, it did not fit well with this study. The reason for this is because the model is patient-based, while this study queried providers. However, in exploring the model, the author was able to obtain a much tighter grasp on the process one goes through when quitting smoking. Knowledge of the Transtheoretical Model has helped the author extensively in clinical practice.

A review of literature showed that, in general, providers are not familiar with smoking cessation guidelines (Steinberg & DeInevo, 2007; Vogt et al., 2005). Providers may not have been familiar with the guidelines, but their practices mirrored the

guidelines in those studies. While rates showed that many providers did well with *ask* and *advise*, they did poorly with *assist* (Chase et al., 2007; Longo et al., 2006; Meredith et al., 2005).

The author developed a tool to assess how providers were *assisting* their patients with smoking cessation. In addition to a demographic section, the tool consisted of nine Likert-style questions and a *yes* or *no* question asking whether the providers had read the 2008 update to the AHRQ's smoking cessation guidelines. The nine questions were divided into three groups: brief counseling, referred counseling, and medications. Each group had three questions. The internet-based survey was sent to nurse practitioners and physician assistants in a healthcare organization in the Upper Midwest.

Data were analyzed using descriptive statistics. A total of 64 people accessed the survey, while 48 completed some portion of the study. All the respondents listed they were female, and all but one of the respondents listed they were a nurse practitioner. Most of the respondents had less than 14 years experience. None of the current respondents were smokers, but 23% had smoked in the past. The data for the individual questions and answers were listed. The lowest response rate to a question was 44 participants. Further analysis was done when the questions were paired into their three groups: brief counseling, referred counseling, and medications. The answers were paired (*Never*/*Rarely*, *Sometimes*/*Always*). In descending order the providers answered that they provided brief counseling most, followed by medications, and then referred counseling. Only 38.6% of the respondents responded that they had read the 2008 update to the AHRQ's smoking cessation guidelines.

Conclusions

Several conclusions are as follows:

1. In descending order, the most used forms of assistance by providers in this study were brief counseling, medications, and referred counseling.
2. Nearly 100% of the providers engaged in brief counseling.
3. Referred counseling in this study, as in the literature, was the least used method of *assisting.*
4. The majority of the providers responded that they had not read the 2008 update of the AHRQ's smoking cessation guidelines, yet their practice patterns mirrored those guidelines.
5. Greater clarity of data may have been obtained by changing the responses of the Likert questions from Never, Rarely, Sometimes, and Always.
6. Since *varenicline* should not be combined with NRT, it may have skewed the responses to the question, "When I recommend medications, it is a combination of prescription and nicotine replacement medications."
7. The internet was an effective and efficient media to distribute the survey.

Implications

With over half of the participants stating they had not read the 2008 update to the AHRQ's smoking cessation guidelines, there needs to be an effort to simplify this information to providers by AHRQ or at the corporate level. Guidelines are only effective if the provider is aware of them and can incorporate them into practice. Ease of use of the guidelines could be enhanced by incorporating them into the electronic health record

or by offering monetary incentives for provider compliance (Bentz et al., 2007; Rothemich et al., 2008).

One must question the responses to whether the providers had read the AHRQ's guidelines. This is because even though the majority of the providers stated they had not read the guidelines, their practice habits mirrored those of the guidelines. This may be because the providers are familiar with the guidelines under a different name, the providers are familiar with the guidelines yet did not read the entire update, or the providers are familiar with a previous version of the guidelines. The author cannot explain the discrepancy, but if the author had to hypothesize, it would be that the providers are familiar with the guidelines under a different name or format.

In this study, referred counseling was the least used form of *assisting*. In the grand scheme, this can be the easiest method to implement. This study showed a large amount of use of telephone quit-lines. Increasing the use of referred counseling can be achieved by simply making the resources available to the smoker. This can be achieved by putting together a packet with listings of local community resources for smoking cessation. Thus, compliance can be increased by referring the smoker to the information listed in the packet. This packet can be developed by individual providers or at a systems level.

In reviewing the data, the author was not satisfied in listing the responses of the Likert questions as *Never*, *Rarely*, *Sometimes*, and *Always*. The author wanted two positive responses and two negative responses. In retrospect, it was felt that *Rarely* and *Sometimes* were too vague of word choices. Perhaps it would have been better to state the questions as statements and use a scale that lists the percentage of the time the participant does that particular statement. An example would be, "I refer my patients to

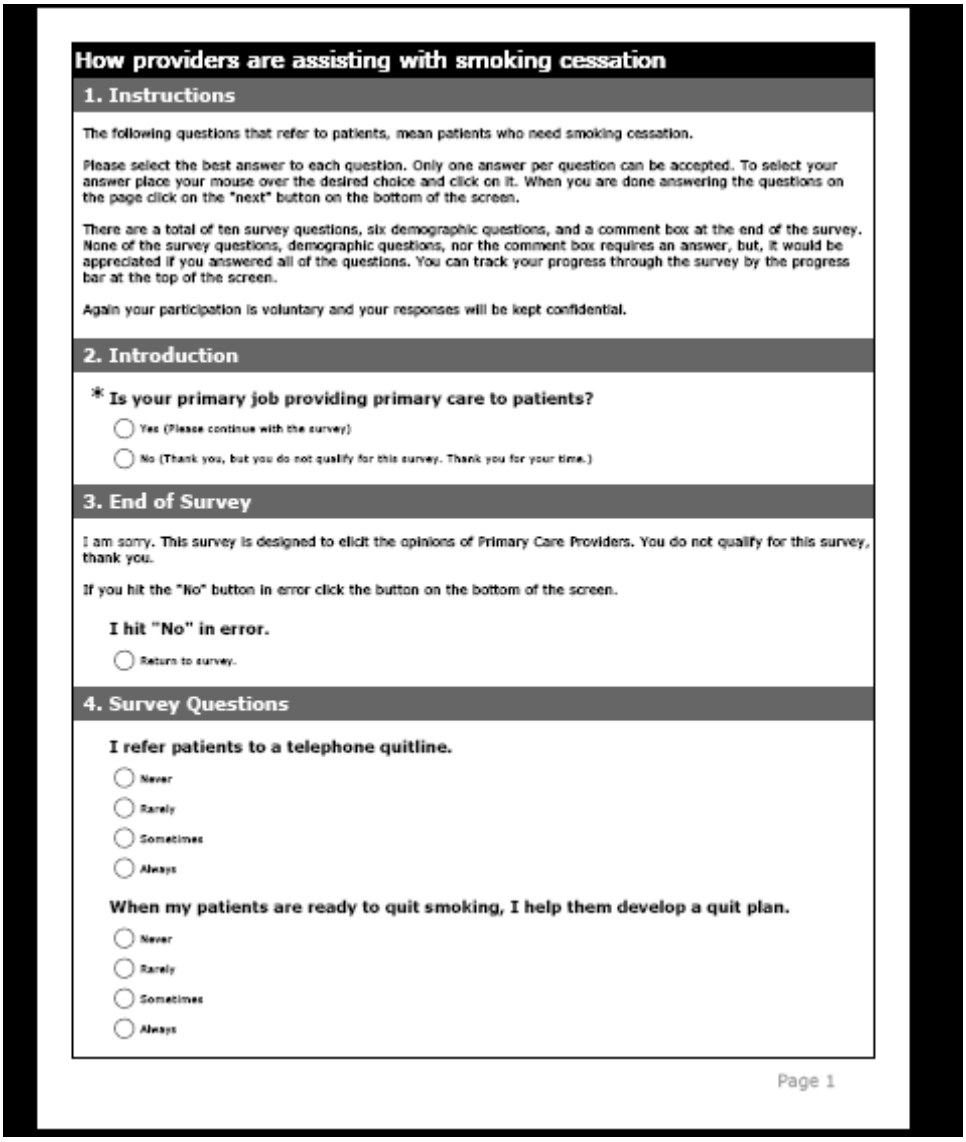
experts in smoking cessation." Then the participant could choose between 0%, 25%, 50%, 75%, or 100%. This would eliminate some of the ambiguity associated with using words like *Rarely* and *Sometimes*.

Varenicline is proving to be an effective and popular medication to help achieve smoking cessation. Because it is new on the market, it will be prescription for some time. It is not recommended that people use NRT while taking *varenicline*. Because of this, some of the participant's answers to the question, "When I recommend medications, it is a combination of prescription and nicotine replacement medications," may have been skewed. The author did not take this into consideration when the question was developed. Even with this flaw in the question, the participants still showed good compliance with medications.

It was noted by the author that the internet was a very efficient delivery vehicle for the survey. One did not have to worry about incurring costs such as procuring paper, stamps, etc. normally associated with a mailed survey. Once the participants to be sampled are determined, it is as simple as sending out an email detailing the survey and including a hyperlink to the survey page. *Survey Monkey* helped facilitate the hosting of the survey and collection of the data for a nominal fee.

APPENDIX A

Copy of Instrument



How providers are assisting with smoking cessation

1. Instructions

The following questions that refer to patients, mean patients who need smoking cessation.

Please select the best answer to each question. Only one answer per question can be accepted. To select your answer place your mouse over the desired choice and click on it. When you are done answering the questions on the page click on the "next" button on the bottom of the screen.

There are a total of ten survey questions, six demographic questions, and a comment box at the end of the survey. None of the survey questions, demographic questions, nor the comment box requires an answer, but, it would be appreciated if you answered all of the questions. You can track your progress through the survey by the progress bar at the top of the screen.

Again your participation is voluntary and your responses will be kept confidential.

2. Introduction

* **Is your primary job providing primary care to patients?**

- ◯ Yes (Please continue with the survey)
- ◯ No (Thank you, but you do not qualify for this survey. Thank you for your time.)

3. End of Survey

I am sorry. This survey is designed to elicit the opinions of Primary Care Providers. You do not qualify for this survey, thank you.

If you hit the "No" button in error click the button on the bottom of the screen.

I hit "No" in error.

- ◯ Return to survey.

4. Survey Questions

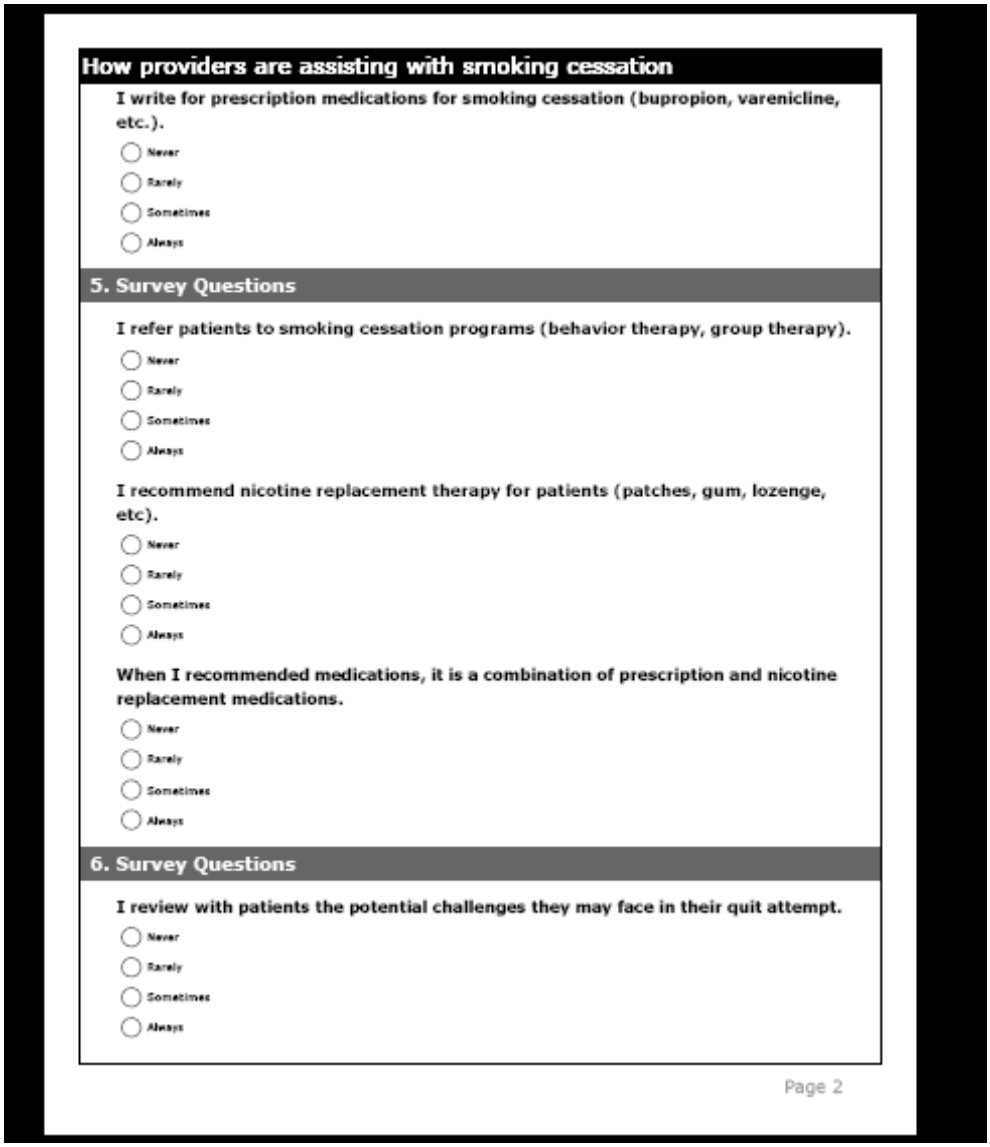
I refer patients to a telephone quitline.

- ◯ Never
- ◯ Rarely
- ◯ Sometimes
- ◯ Always

When my patients are ready to quit smoking, I help them develop a quit plan.

- ◯ Never
- ◯ Rarely
- ◯ Sometimes
- ◯ Always

Page 1



How providers are assisting with smoking cessation

I write for prescription medications for smoking cessation (bupropion, varenicline, etc.).

- ◯ Never
- ◯ Rarely
- ◯ Sometimes
- ◯ Always

5. Survey Questions

I refer patients to smoking cessation programs (behavior therapy, group therapy).

- ◯ Never
- ◯ Rarely
- ◯ Sometimes
- ◯ Always

I recommend nicotine replacement therapy for patients (patches, gum, lozenge, etc).

- ◯ Never
- ◯ Rarely
- ◯ Sometimes
- ◯ Always

When I recommended medications, it is a combination of prescription and nicotine replacement medications.

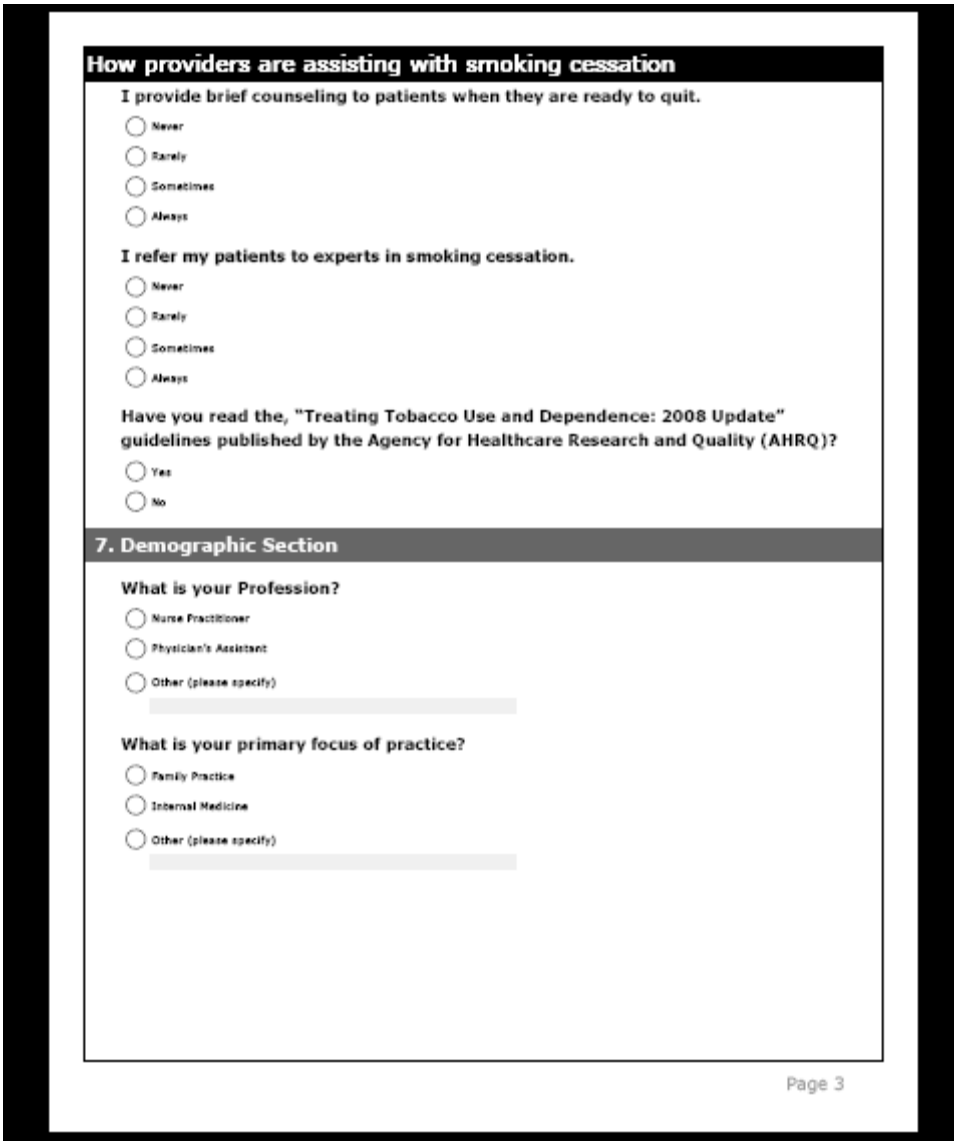
- ◯ Never
- ◯ Rarely
- ◯ Sometimes
- ◯ Always

6. Survey Questions

I review with patients the potential challenges they may face in their quit attempt.

- ◯ Never
- ◯ Rarely
- ◯ Sometimes
- ◯ Always

Page 2



How providers are assisting with smoking cessation

I provide brief counseling to patients when they are ready to quit.

- ◯ Never
- ◯ Rarely
- ◯ Sometimes
- ◯ Always

I refer my patients to experts in smoking cessation.

- ◯ Never
- ◯ Rarely
- ◯ Sometimes
- ◯ Always

Have you read the, "Treating Tobacco Use and Dependence: 2008 Update" guidelines published by the Agency for Healthcare Research and Quality (AHRQ)?

- ◯ Yes
- ◯ No

7. Demographic Section

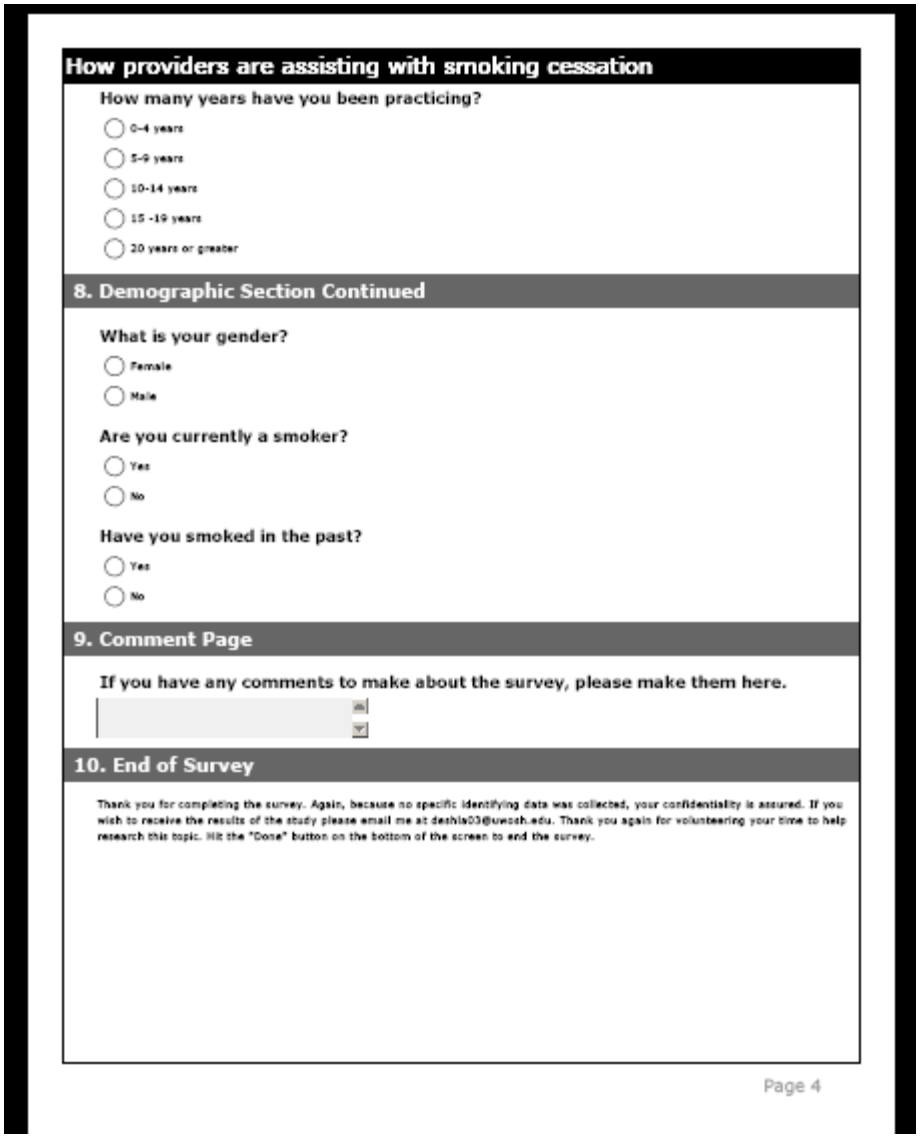
What is your Profession?

- ◯ Nurse Practitioner
- ◯ Physician's Assistant
- ◯ Other (please specify)

What is your primary focus of practice?

- ◯ Family Practice
- ◯ Internal Medicine
- ◯ Other (please specify)

Page 3



How providers are assisting with smoking cessation

How many years have you been practicing?

- ◯ 0-4 years
- ◯ 5-9 years
- ◯ 10-14 years
- ◯ 15 -19 years
- ◯ 20 years or greater

8. Demographic Section Continued

What is your gender?

- ◯ Female
- ◯ Male

Are you currently a smoker?

- ◯ Yes
- ◯ No

Have you smoked in the past?

- ◯ Yes
- ◯ No

9. Comment Page

If you have any comments to make about the survey, please make them here.

10. End of Survey

Thank you for completing the survey. Again, because no specific identifying data was collected, your confidentiality is assured. If you wish to receive the results of the study please email me at deshis03@uwosh.edu. Thank you again for volunteering your time to help research this topic. Hit the "Done" button on the bottom of the screen to end the survey.

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APPENDIX B

University of Wisconsin Oshkosh IRB Permission Letter

THE UNIVERSITY OF WISCONSIN
OSHKOSH

January 22, 2009

Mr. Adam Deshler
228 Lau Street
Green Bay, WI 54302

Dear Mr. Deshler:

On behalf of the UW Oshkosh Institutional Review Board for Protection of Human Participants (IRB), I am pleased to inform you that your application has been approved for the following research: How do Providers Assist Their Patients with Smoking Cessation.

Your research protocol has been classified as EXEMPT. This means you will not be required to obtain signed consent. However, unless your research involves **only** the collection or study of existing data, documents, or records, you must provide each participant with a summary of your research that contains all of the elements of an Informed Consent document, as described in the IRB application material. Permitting the participant, or parent/legal representative, to make a fully informed decision to participate in a research activity avoids potentially inequitable or coercive conditions of human participation and assures the voluntary nature of participant involvement.

Please note that it is the principal investigator's responsibility to promptly report to the IRB Committee any changes in the research project, whether these changes occur prior to undertaking, or during the research. In addition, if harm or discomfort to anyone becomes apparent during the research, the principal investigator must contact the IRB Committee Chairperson. Harm or discomfort includes, but is not limited to, adverse reactions to psychology experiments, biologics, radioisotopes, labeled drugs, or to medical or other devices used. Please contact me if you have any questions (PH# 920/424-7172 or e-mail: rauscher@uwosh.edu).

Sincerely,

Dr. Frances Rauscher

Dr. Frances Rauscher
IRB Chair

cc: Roxana Huebscher
1501

INSTITUTIONAL REVIEW BOARD
UNIVERSITY OF WISCONSIN OSHKOSH · 800 ALGOMA BLVD · OSHKOSH WI 54901
(920) 424-3215 · FAX: (920) 424-3221

APPENDIX C

Aurora Health Care Approval Form

Aurora Health Care

Research Subject
Protection Program
945 N 12th St
PO Box 342 W310
Milwaukee, WI 53201-0342

T 414.219.7744
F 414.219.7477
IRB.office@aurora.org

www.AuroraHealthCare.org

23 January 2009

Adam Deshler, BSN
228 Lau St
Green Bay, WI 54302

Dear Mr. Deshler:

I have received your proposal entitled *How providers are assisting their patients with smoking cessation* on 20 October 2008. Based on the information you provided, it is my opinion that this proposal is exempt from IRB review [45CFR46.101(b)(2)] and may be carried out as you have indicated. I will bring this proposal to the attention of the Aurora IRB† at the meeting scheduled for 25 February 2009. In addition, no protected health information is being reviewed or collected; therefore, no HIPAA determination is necessary. The IRB has also reviewed and approved the information that you will be presenting to potential subjects. Please note that IRB approval is not administrative approval, and you should ensure you have the approval of appropriate administrators before you conduct the study.

Thank you for bringing your proposal to the attention of the Aurora Research Subject Protection Program. If the plan or intent of your proposal changes in the future, this information should be brought to the attention of the Research Subject Protection Program to determine if IRB review would be required at that time. If you require further assistance, feel free to call Lori Roesch, Manager of the Research Subject Protection Program.

Sincerely,

Martin K. Oaks, Ph.D.
Chair, Aurora IRB ASMC and ASLMC

†*Aurora IRB Compliance Statement:* The Aurora Health Care Institutional Review Boards (Aurora IRBs) comply with all applicable laws, guidelines, and federal regulations that oversee the operation of Institutional Review Boards, specifically 45CFR46 and 21CFR50 and 56, including International Conference of Harmonisation E6 Good Clinical Practice guidance (ICH GCPs). The Aurora IRBs are duly constituted (fulfilling federal requirements for diversity), have written procedures for initial and continuing review of clinical trials, prepare written minutes of convened meetings, and retain records pertaining to the review and approval process. In accordance with these regulations [45CFR46.107(e) and 21CFR56.107(e)], the Aurora IRBs prohibit any member from participating in the IRB's initial or continuing review of any study in which the member has a conflicting interest, except to provide information requested by the IRB. Our policy is to require a voting member of the IRB to leave the room for final discussion and voting on a protocol in which the member is an investigator, or has any conflict of interest. In addition, the Aurora IRBs have received FULL accreditation by AAHRPP (valid until September 2011).

REFERENCES

American Lung Association (2007). *Data and statistics*. Retrieved July 14, 2008, from http://www.lungusa.org/site/c.dvLUK9O0E/b.33347/

An, L., Zhu, S., Nelson, D., Arikian, N., Nugent, S., & Partin, M. et al. (2006). Benefits of telephone care over primary care for smoking cessation. *Archives of Internal Medicine*, *166*, 536-542.

Annual smoking-Attributable mortality, years of potential life lost, and productivity losses - United States, 1997-2001. (2005). *Morbidity and Mortality Weekly Report*, *54*(25), 625-628.

Bentz, C., Bayley, B., Bonin, K., Fleming, L., Hollis, J., & Hunt, J. et al. (2007). Provider feedback to improve 5A's tobacco cessation in primary care: A cluster randomized clinical trial. *Nicotine and Tobacco Research*, *9*(3), 341-349.

Boldemann, C., Gilljam, H., Lund, K., & Helgason, A. (2006). Smoking cessation in general practice: The effects of a quitline. *Nicotine and Tobacco Research*, *8*(6), 785-790.

Browning, K., Ferketich, A., Salsberry, P., & Wewers, M. (2008). Socioeconomic disparity in provider-delivered assistance to quit smoking. *Nicotine and Tobacco Research*, *10*(1), 55-61.

Chase, E., McMenamin, S., & Halpin, H. (2007). Medicaid provider delivery of the 5As for smoking cessation counseling. *Nicotine and Tobacco Research*, *9*(11), 1095-1101.

Cigarette smoking among adults - United States, 2004. (2005). *Morbidity and Mortality Weekly Report*, *54*(44), 1121-1124.

Cokkinides, V., Ward, E., Jemal, A., & Thun, M. (2005). Under-use of smoking-cessation treatments. Results from the national health interview survey, 2000. *American Journal of Preventive Medicine*, *28*(1), 119-122.

Denny, C., Serdula, M., Holtzman, D., & Nelson, D. (2003). Physician advice about smoking and drinking. Are U.S. adults being informed. *American Journal of Preventative Medicine*, *24*(1), 71-74.

Longo, D., Stone, T., Phillips, R., Everett, K., Kruse, R., & Jaen, C. et al. (2006). Characteristics of smoking cessation guideline use by primary care physicians. *Missouri Medicine*, *103*(2), 180-184.

Meredith, L., Yano, E., Hickey, S., & Sherman, S. (2005). Primary care provider attitudes are associated with smoking cessation counseling and referral. *Medical Care*, *43*(9), 929-934.

Merriam-Webster Online Dictionary (2008). *Assist*. Retrieved July 14, 2008, from http://www.merriam-webster.com/dictionary/assist

Molyneux, A., Lewis, S., Lievers, U., Anderton, A., Antoniak, M., & Brakenridge, A. et al. (2003). Clinical trial comparing nicotine replacement therapy plus brief counseling, brief counseling alone, and minimal intervention on smoking cessation in hospital inpatients. *Thorax*, *58*, 484-488.

Physician and other health-care professional counseling of smokers to quit - United States, 1991. (1993). *Morbidity and Mortality Weekly Report*, *42*(44), 854-857.

Prochaska, J., Norcross, J., & DiClemente, C. (1995). When you change. In *Changing for good* (pp. 36-50). New York: Quill.

Raw, M., Anderson, P., Barta, A., Dubois, G., Harrington, P., & Hirsch, A. et al. (2002). WHO Europe evidenced based recommendations on the treatment of tobacco dependence. *Tobacco Control*, *11*, 44-46.

Rothemich, S., Woolf, S., Johnson, R., Burgett, A., Flores, S., & Marsland, D. et al. (2008). Effect on cessation counseling of documenting smoking status as a routine vital sign: An ACORN study. *Annals of Family Medicine*, *6*(1), 60-68.

Steinberg, M., & DeInevo, C. (2007). Physician beliefs regarding effectiveness of tobacco dependence treatments: Results from the nj health care provider tobacco survey. *Journal of General Internal Medicine*, *22*(10), 1459-1462.

Thorndike, A., Rigotti, N., Stafford, R., & Singer, D. (1998). National petterns in the treatment of smokers by physicians. *Journal of the American Medical Association*, *279*(8), 604-608.

U.S. Department of Health and Human Services (2000). *Healthy people 2010: Volume 2*. Retrieved July 14, 2008, from www.healthypeople.gov/Document/HTML/Volume2/27Tobacco.htm#_Toc489776228

U.S. Department of Health and Human Services. (1996, April 1996). *Clinical practice guideline number 18: Smoking cessation* (AHCPR. No. 96-0692). Washington D.C..

U.S. Department of Health and Human Services. (2008). *Treating Tobacco Use and Dependence: 2008 Update* (ed.) [Brochure]. Washington D.C.: Author.

Use of cessation methods among smokers aged 16-24 years - United States, 2003. (2006, December 22). *Morbidity and Mortality Weekly Report*, *55*, 1351-1354.

Vogt, F., Hall, S., & Marteau, T. (2005). General practitioners' and family physicians' negative beliefs and attitudes towards discussing smoking cessation with patients: A systematic review. *Addiction*, *100*, 1423-1431.

Ward, M., Vaughn, T., Unden-Holman, T., Doebbeling, B., Clarke, W., & Woolson, R. (2002). Physician knowledge, attitudes and practices regarding a widely implemented guideline. *Journal of Evaluation in Clinical Practice*, *8*(2), 155-162.

Weber, D., Wolff, L., Orleans, T., Mockenhaupt, R., Massett, H., & Vose, K. (2007). Smoker's attitudes and behaviors related to consumer demand for cessation counseling in the medical care setting. *Nicotine and Tobacco Research*, *9*(5), 571-580.

World Health Organization. (2002). *The Tobacco Atlas*. London: Author.