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Physician perceived barriers to smoking cessation counseling:

A rural vs. urban perspective.

Rebecca Coalson, MS-IV and Dawn Novak, MS-IV

November 26th, 2007

Abstract:

BACKGROUND: It has been well established that smoking is one of the primary causes of not only cardiovascular disease but many chronic diseases associated with both high morbidity and mortality. Smoking cessation is one of the few areas in which physician counseling has shown to be effective in eliciting patient lifestyle modifications.^{11,12} However, physicians have been shown to do a very poor job of assessing a patient's willingness to quit, counseling or assisting them in quitting, and arranging for follow up²¹ yet, it is not well documented why that is the case. We are interested the perceived barriers to smoking cessation counseling for physicians in New Mexico and whether or not there is a difference in those perceived barriers for rural and urban physicians. METHODS AND RESULTS: We conducted a survey by mail of rural and urban family practice and internal medicine physicians selected at random in the State of New Mexico to determine if frequencies of perceived barriers are different for urban and rural family practice physicians. The survey included a choice of five possible barriers a physician can encounter in counseling patients on smoking cessation. Survey forms were sent to 500 physicians, 101 urban and 98 rural surveys were returned. No statistically significant difference was found between the rural and urban groups for any of the barriers. However, the study was only powered to detect up to a 19% difference between the groups. Based on our calculated Confidence Intervals (ranging from -21-26%), up to a 26% difference could have been missed. Our study did show that for both rural and urban physicians "Lack of Time" and "Patient's Unwillingness to Change" are central barriers to smoking cessation counseling. CONCLUSIONS: While the study was not powered to detect differences based on the response rate, there were actual differences between the groups as reported in percentages. These were very interesting and could indeed be important. Also, lack of time and patient's unwillingness to change are central barriers to smoking cessation counseling for New Mexico physicians. More research is needed on ways to assist primary care physicians to overcome these identified barriers in order to implement effective smoking cessation interventions.

Background:

Cardiovascular disease (CVD) continues to be a leading cause of morbidity and mortality nationwide. According to the American Heart Association, in 2003 more than 71 million Americans had one or more forms of cardiovascular disease. That same year, over 37% of all deaths were due to cardiovascular disease.¹ It has been well established that smoking is one of the primary causes of not only cardiovascular disease but many chronic diseases associated with both high morbidity and mortality. Additionally, it has been shown that smoking cessation significantly improves health outcomes.^{1,2}

Since smoking is a *modifiable* risk factor of CVD, it is an excellent place to target healthcare interventions. In fact, smokers have even begun to expect their primary care doctors to discuss quitting strategies with them. A recent study by Conroy, et al found “patient reports of smoking cessation interventions delivered during primary care practice are associated with greater patient satisfaction with their health care, even among smokers not ready to quit.”⁷ Other studies have shown similar correlations between patient satisfaction and smoking cessation counseling.⁸ Perhaps this is because smoking cessation is one of the few areas in which physician counseling has shown to be effective in eliciting patient lifestyle modifications.^{11, 12}

There is substantial evidence showing that patients are more likely to quit if they have been encouraged to do so by their doctors. This has led to the establishment of national guidelines that advise physicians to regularly counsel their patients to quit. The United States Preventative Services Task Force (USPSTF) highly recommends “that clinicians screen all adults for tobacco use and provide tobacco cessation interventions for those who use tobacco products [because of] good evidence that brief smoking cessation interventions, including screening and, brief behavioral

counseling (less than 3 minutes) ... are effective in increasing the proportion of smokers who successfully quit smoking and remain abstinent after 1 year.”¹² The U.S. Public Health Service clinical practice guideline urges clinicians to identify every tobacco user seen in the healthcare setting. Their treatment guideline is described by using "5A's" (Ask, Advise, Assess, Assist, Arrange) according to a patient's readiness to quit. Additionally, Healthy People 2010 has listed tobacco use as one of the 10 leading health indicators to be used as a measure of the nation's health over the next decade. One of their main goals is to increase the proportion of internists and family practice doctors who counsel their at-risk patients about tobacco use cessation to 85%.^{13,14}

This is no small task, because despite these national guidelines and supporting evidence, studies show that physician counseling on smoking cessation continues to be low.^{16,17} A recent study was conducted by The Department of Preventive Medicine at the University of Kansas Medical Center to determine how often family physicians incorporate smoking cessation efforts into routine office visits. They found that for routine office visits in 38 primary care physician practices, tobacco was discussed only 21% of the time. Also, discussions were more common during new patient visits but occurred less often with older patients and among physicians in practice more than 10 years. Finally, of 244 smokers identified, physicians provided assistance with smoking cessation for only 38%.^{16,17}

Other studies have shown that while most physicians are aware of the 5 A's (Ask, Advise, Assess, Assist, Arrange) strategy of changing behavior, they have yet to master the complete implementation of them into clinical practice. Physicians have been shown to do a very poor job of assessing a patient's willingness to quit, assisting them in quitting, and arranging for follow up.²¹ Even more unsettling is the fact that physicians' counseling is lowest for ethnic minorities and those people of lower socioeconomic status even though these are the groups that have the highest smoking rates.^{19, 20, 21}

While it has been well established that clinic based patient smoking cessation counseling remains suboptimal and below national goals, it is not well documented why that is the case. Initial studies have pointed towards doctors' attitudes towards and perceived barriers to providing smoking cessation education counseling.^{21,22} This is the basis for our research project. We are interested the perceived barriers to smoking cessation counseling for physicians in New Mexico and whether or not there is a difference in those perceived barriers for rural and urban physicians.

Materials and Methods:

We conducted a survey by mail of rural and urban family practice physicians in the State of New Mexico to determine if frequencies of perceived barriers are different for urban and rural family practice physicians.

The United States Department of Agriculture Economic Research Service (USDA-ERS) defines rural and urban using Metropolitan Statistical Area (MSA) codes. MSA codes are based on population size of a county. Metropolitan or urban counties are those assigned codes 1-3, while non-metropolitan or rural counties are assigned codes 4-9.²³ Each county in New Mexico has been assigned one of these codes based on the MSA guidelines.²³ We used these codes to define what constitutes urban or rural physicians. Physicians practicing in counties assigned MSA numbers 1-3 were considered urban, while physicians practicing in counties assigned MSA numbers 4-9 were considered rural. An "R" or "U" was circled at the bottom of each survey to indicate whether the survey was sent to a physician practicing in a rural county or to a physician practicing in an urban county. However, no personal identification information was included on the response survey.

A background letter was sent out explaining the project along with the survey (Please see Appendix A). The complete questionnaire that we used is attached in Appendix B of this document.

The brief questionnaire was taken from a portion of the survey used in “*Physician Attitudes Regarding Cardiovascular Risk Reduction: The Gaps Between Clinical Importance, Knowledge, and Effectiveness*” which was a study published in *Disease Management; Vol. 8, No. 2; 2005; pp. 93-105*. Thus, this questionnaire has been utilized in a previously published study. The rationale behind using only a portion of the survey rather than it in its entirety was two-fold. First, the portion we used specifically addressed our hypothesis and secondly, we felt a shorter survey would give a better response rate in light of physician’s busy schedules.

We randomly selected 500 family practice physicians (250 from rural areas and 250 from urban areas) across the state of New Mexico and sent them a paper copy of the survey with a self addressed-stamped return envelope. We consulted statistician Dr. Betty Skipper for the sample size calculation and analysis of the data. The mailing of 500 surveys with a projected 40% return rate (giving us 200 surveys back to use for data) would allow us to get approximately a 13-19% difference detection using 80% power. We used Excel tables, such as the example below, to log the frequencies of each perceived barrier for urban and rural physicians.

Barrier	Location	
	Urban	Rural
Not enough time		

Example of table used in analyzing data.

The data was analyzed using Fisher’s exact test to determine if there was a statistically significant difference between percentages of urban and rural physicians who reported on each barrier.

We also anticipated the possibility of receiving unequal rural vs. urban responses which could cause difficulties with data analysis. However, we found that our response rate was almost the same

with 101 surveys being returned by urban physicians and 98 surveys being returned by rural physicians.

Additionally, we knew that non-response bias was a potential difficulty that might occur as a result of not acquiring a 100 percent response. We attempted to address this issue by maintaining a short, five question survey and providing a self-addressed stamped envelope for convenience.

Results

One hundred and one urban and 98 rural surveys were returned and the responses were recorded in an Excel program for each individual survey. These responses were then tallied for each category (None, Not enough time, I would like more education/training in smoking cessation counseling, Patients are often not willing to engage in lifestyle modification, I am discouraged because of the lack of reimbursement for time spent counseling patients.). Percentages were calculated for each individual category and group. In addition, Fisher's exact test was used to compare the rural and urban groups.

The data showed that the p-value for the difference between rural and urban physicians approached statistical significance for the "Not enough time" barrier (p-value 0.08), while the other barriers did not have p-values that were close to statistical significance. The actual differences (in percentages), the p-values and Confidence Intervals (CI) are shown in Table-1 below.

TABLE-1

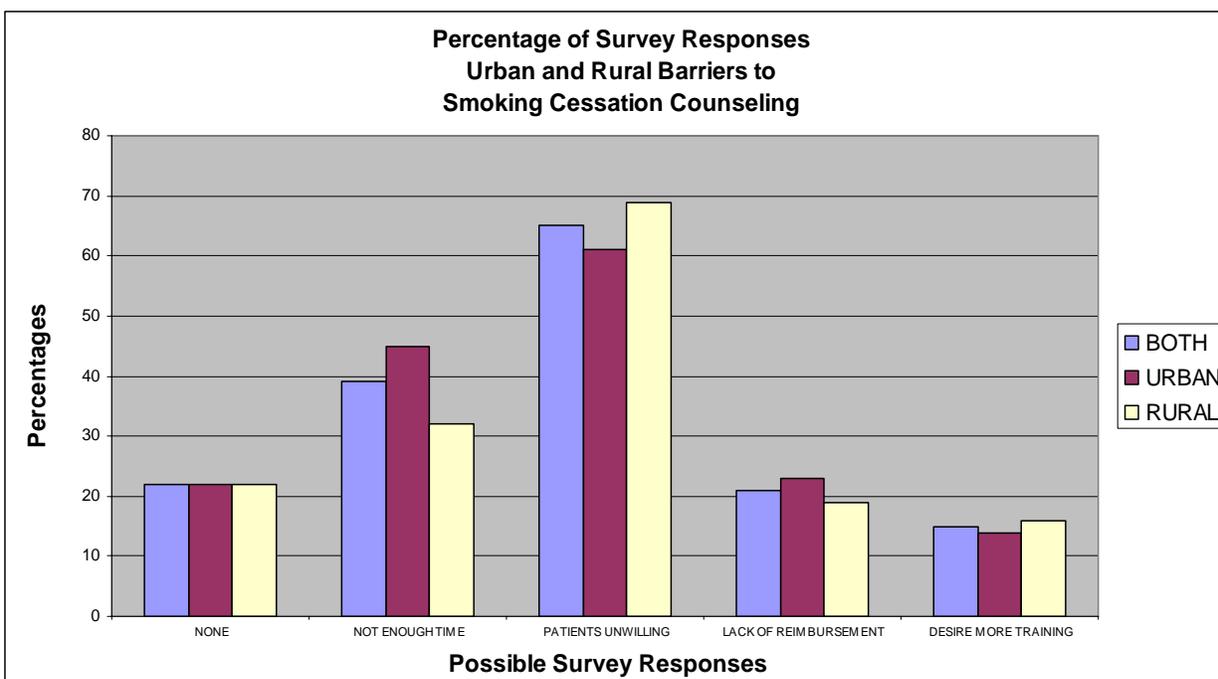
Urban and Rural Barriers to Smoking Cessation, 2007 Physician Survey

	All N=199 % (95% CI)	Urban N=101 % (95% CI)	Rural N=98 % (95% CI)	p-value ¹	Difference ² % (95% CI)
None	22% (16%, 28%)	22% (14%, 31%)	22% (14%, 31%)	1.0	0% (-12%, 11%)
Not Enough Time	39% (32%, 46%)	45% (35%, 55%)	32% (23%, 43%)	0.08	12% (-1%, 26%)
Patients Unwilling	65% (58%, 72%)	61% (51%, 71%)	69% (58%, 78%)	0.30	-7% (-21%, 6%)
Lack of Reimbursement	21% (15%, 27%)	23% (15%, 32%)	19% (12%, 28%)	0.60	4% (-7%, 15%)
More Training	15% (10%, 20%)	14% (8%, 22%)	16% (9%, 24%)	0.84	-2% (-12%, 8%)

¹Fisher's exact test was used to compare the rural and urban subgroups.

²Difference between urban and rural percents.

TABLE-2



Discussion

While the p-values would indicate that the data is not statistically significant to detect a difference between the rural and urban groups, we believe that a Type II error may have occurred; consequently causing one to erroneously dismiss that there is an actual difference between the rural and urban groups. This is likely due to a matter of inadequate statistical power, meaning that our study did not enroll enough physicians to confer confidence that any difference we observed is a true difference. Our study was powered to detect up to a 19% difference and having obtained a lower survey return rate to use for our study, this means up to a 26% difference could be missed. The actual differences, as reported in percentages, could be important yet the study was not powered to detect differences of this scale. Therefore, with a larger sample size it is possible our p-values would have been statistically significant and would have shown a significant difference between rural and urban smoking cessation counseling barriers. Interestingly, for example, one study titled “*Rural-Urban Differences in Visits to Primary Care Physicians*” by J.C. Probst et.al. utilized 19,409 surveys and did find that “counseling regarding...tobacco,...occurred in proportionately fewer office visits in rural settings.”²⁴ Even though our study was not powered to detect such differences, the actual differences as reported in percentages, shown in Table-2, were very interesting and could indeed be important and warrant some discussion.

Nearly forty percent of both rural and urban physicians reported lack of time as a barrier to providing smoking cessation counseling to patients. However, even very brief interventions can be effective. The Agency for Health Care Policy and Research Smoking Cessation Clinical Practice Guideline showed that advice of even 3 minutes or less is effective in promoting smoking cessation.²⁷ A study by Russell and Roter reported spending an average of 1 minute and 46 seconds. They reasoned that if a provider sees 30 patients a day and 25% of them are smokers (approximately the national average) that this intervention would only add an extra 11 minutes to the work day.

In addition, physicians can utilize in-house smoking cessation counselors or telephone counselors to help circumvent the issue of time limitations. The advantage of an in-house counselor is that this limits patients lost to follow up. The patient is already in the office to see the doctor and the counselor could meet with them briefly before or after their appointment. However, some doctors might not be able to support such an addition to their staff. In this instance, doctors could make use of the many telephone counseling services available. Several studies have shown this is both a cost-effective and successful method of helping smokers quit.^{28,29}

Approximately one-fifth survey respondents listed lack of reimbursement as a barrier to smoking cessation counseling. However, according to a recent survey by America's Health Insurance Plans, the majority of insurers surveyed provided coverage for at least one type of behavioral intervention. In fact, 34% of survey respondents reported having increased reimbursement to providers for smoking cessation counseling and assistance. Also, the percentage of insurers paying for pharmacotherapy has more than tripled in the past decade with many plans now providing full coverage to their members for at least one type of pharmacotherapy.²⁵ In addition, beginning in March 2005, Medicare now covers two quit attempts per year, with a maximum of four intermediate (3-10 minutes) or intensive (greater than 10 minutes) counseling sessions for a total of 8 sessions per year. Payment varies by region but averages about \$13 for intermediate and \$25 for intensive sessions.²⁶ While these rates are low compared to coverage for in office procedures, they represent a positive change and a growing awareness at the federal level for the need to reimburse doctors for time spent counseling on preventative healthcare.

Almost two-thirds of physicians in this study saw patient unwillingness to quit as a barrier. However, according to the U.S. Public Health Service clinical practice guideline of using the 5A's, "all patients need to be at least asked about their smoking status and advised to quit". This includes those patients that are not ready to do so. The absolute quit difference between those who receive simple, one-time advice from a physician to quit and those who don't is 2%.²⁹ Also, the American College of

Chest Physicians goes beyond the 5A's and suggests the 5R's for individuals who are not willing to quit. These include: Relevance of quitting for the patient, Risks of illness related to continued tobacco use, Rewards/benefits of smoking Cessation, Roadblocks for quitting, and Repetition of the motivation intervention as each encounter.³⁰

Only 15% of the respondents felt they needed more training. However, it has been well document that doctors need to improve on counseling patients. As mentioned previously, the recommended components of effective smoking-cessation counseling are the "5A's": **ask** about tobacco use at every visit (A1), **advise** to quit (A2), **assess** willingness to make a quit attempt (A3), **assist** with counseling and pharmacotherapy (A4), and **arrange** follow-up support and assistance (A5). A recent survey did show that many of the doctors successfully implemented A1 and A2 but did a very poor job on A3-A5 (56%, 38%, and 9 % respectively).³¹ These findings were the same even when seeing patients for smoking-related diagnoses. Data from the Behavioral Risk Factor Surveillance System (BRFSS) showed that nicotine replacement therapy use was reported at only 0.3% of smokers visits and that Bupropion uses was only recorded at 1.87% of visits.²⁹ However, many studies have shown that nicotine replacement therapy is effective at aiding in long term cessation.³²

Finally, about about one-fifth of respondents felt there was no barriers to providing smoking cessation. However, recent data from the BRFSS indicates that most physicans provide counseling to preferentially different patients based on demographics. Counseling rates were highest amongst older Anglo men. It was reasoned that in this instance doctors are providing quit advice as a therapeutic intervention rather than a preventative one.²⁹

Summary

While our study was not powered to detect differences based on our response rate, there were actual differences between rural and urban groups as reported in percentages. These were very interesting and could indeed be important. Lack of time and patient's unwillingness to change were central barriers to smoking cessation counseling reported by New Mexico physicians. These barriers

could be circumvented by employing such options as physician use of professional smoking cessation counselors, revisiting the “5A’s” of smoking cessation with patients, or training non-physician office personnel in counseling techniques. In addition, there has slowly been a positive change at the federal level for the need to reimburse doctors for time spent counseling on preventative healthcare and the awareness for better training regarding preventative counseling has increased. In any case, smoking cessation is a modifiable risk factor for many diseases and counseling regarding quitting is vital to health care across many fields of medicine. The reasons physicians are not meeting national guidelines regarding smoking cessation counseling remain unclear and therefore the topic warrants further documentation as to why this is the case. More research is desperately needed to seek ways to assist primary care physicians to overcome these identified barriers in order to implement effective smoking cessation interventions.

Appendix A: Sample Letter to be sent with Survey Questionnaire

Informed Consent Cover Letter for Anonymous Surveys

STUDY TITLE

Physician perceived barriers to smoking cessation counseling: A rural vs. urban perspective.

January 1, 2006

Family Medicine Physician
0000 Street
Anywhere, New Mexico 80000

Dear New Mexico Physician,

We, Rebecca Coalson and Dawn Walstrom, are both second year medical students at the University of New Mexico. As part of our medical education requirements we are conducting a research study and we are in need of your help to complete our project.

You are being asked to participate in this study because you are a Family Medicine Physician practicing in New Mexico. The findings from this project will provide information on various barriers New Mexico Family Physicians face in smoking cessation counseling so as to improve New Mexico public health education.. Your participation will involve filling out a brief, one question survey. The survey should take about two minutes to complete. Your involvement in the study is voluntary, and you may choose not to participate. There are no names or identifying information associated with this survey. The survey includes one question regarding the obstacles, if any, you as a New Mexico Family Practice Physician encounter in counseling patients on smoking cessation . You can refuse to answer if you wish. There are no known risks in this study, but some individuals may experience discomfort when answering this question. All data will be kept for 3 years in a locked file in Dr. Angelo Tomedi's, our research mentor, office and then destroyed. If published, results will be presented in summary form only.

Again, enclosed is a very short anonymous questionnaire that we would like you to fill out and mail back to us in the provided self addressed-stamped envelope no later than March 29th,2006. By returning this survey in the envelope provided, you will be agreeing to participate in the above described research study. If you have questions regarding your legal rights as a research subject, you may call the UNMHSC Human Research Review Committee at (505) 272-1129.

We realize your time is extremely valuable, and we would like you to know that the few, short minutes you take to fill out our survey is greatly appreciated.

Thank You,

Rebecca Coalson, MS-IV & Dawn Walstrom, MS-IV

Appendix B: Sample of Survey Questionnaire

Instructions: After filling out the short survey below, please return this page in the provided self addressed-stamped envelope. Thank you again for your time in participating in our Medical Student Research Project.

Which of the following obstacles do you encounter in counseling patients on smoking cessation?

Please check all that apply.

- None.
- Not enough time.
- I would like more education/training in smoking cessation counseling.
- Patients are often not willing to engage in lifestyle modification.
- I am discouraged because of the lack of reimbursement for time spent counseling patients.

For Data Collection Purposes Only: R U

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