

Smoking Prevalence and Nicotine Patch Success Rate Within a VA Medical Center

Martin Hahn, PharmD; Jennifer Bean, PharmD, BCPS;
M. Shawn McFarland, PharmD, BC-ADM; and Wes Carnahan, PharmD, BCPS

Smoking is a problem among veteran patients. Although nicotine patches are prescribed frequently for smoking cessation, no data exist regarding whether this treatment is successful in this patient population.

Cigarette smokers have been shown to have a greater risk of developing cardiovascular and pulmonary problems than nonsmokers, with an estimated 438,000 Americans dying annually from smoking-related diseases.¹ Smoking is responsible for 90% of deaths caused by lung cancer, 80% to 90% of deaths caused by chronic obstructive pulmonary disease, 21% of deaths caused by heart disease, and 18% of deaths caused by stroke.² Older smokers are even more at risk, with male smokers aged 65 years and older being twice as likely to die from a stroke and 60% more likely to die from a myocardial infarction than nonsmokers the same age.³ Currently, it is estimated that between 20.8% (45.3 million) and 23% (50.1 million) of all American adults smoke.^{4,5} Hence, it could be said that smoking

is one of the most important preventable causes of premature death in the United States.

The estimated number of smokers is higher among the veteran population (defined as those veteran patients receiving care from the VHA) than among the general population. Several explanations for the higher rate have been suggested, and many of them relate to military life. One is that soldiers had access to cigarettes during World War II, when they were distributed as part of K-rations and C-rations in an effort to boost morale.⁶ Another is that military personnel demonstrate key demographic characteristics that may put them at risk for smoking, including low education level, group living conditions, and exposure to stress and boredom.⁶ Furthermore, extra breaks (to smoke a cigarette) traditionally have been given to soldiers who smoke. Finally, active duty personnel and veterans have a high rate of alcohol consumption, and smoking has been linked to alcohol consumption.⁷

Jonk and colleagues estimated that only 7% of veterans who smoke receive a smoking cessation aid (SCA) from VA medical centers (VAMCs), with 70% of these SCA prescriptions being nicotine patches.⁵ Studies have

shown that nicotine patches produce abstinence rates from 5% to 23.4% at 6 months, 17% at 1 year, and 13.8% at 3 years, with many more studies estimating success rates amid these values.^{8,9-13} No literature exists regarding the success rate of nicotine patches in veteran patients who smoke, however.

Due to the unknown rate of smoking at the VA Tennessee Valley Healthcare System (VATVHS), we evaluated the prevalence of smoking during fiscal year 2008 as the primary objective of our study. We also determined the percentage of veteran patients who attempted to quit smoking with the use of nicotine patches and the smoking cessation success rate with nicotine patches as secondary objectives. Before describing our methods and results, we present background information on past estimations of smoking prevalence in veteran populations and the VA/DoD guidelines for treating tobacco use.

SMOKING AND VETERANS

Scope of the problem

Authors of a 1999 survey of veterans' health behaviors, after adjusting for age and sex, estimated the prevalence of smoking in the veteran population to be 33%, compared with a rate of

At the time of this study, **Dr. Hahn** was a PGY-1 pharmacy practice resident at the VA Tennessee Valley Healthcare System (VATVHS), Nashville. He is now a clinical/staff pharmacist at Skyline Medical Center, Nashville, Tennessee. **Dr. Bean** is a clinical pharmacy specialist in home-based primary care and mental health services, **Dr. McFarland** is a clinical pharmacy specialist in primary care, and **Dr. Carnahan** is a clinical pharmacy specialist in oncology and formulary management, all at the VATVHS. In addition, Drs. Bean and Carnahan are assistant professors and Dr. McFarland is an associate professor, all at the University of Tennessee College of Pharmacy.

Continued on page 16

Continued from page 14

23.5% among American adults.^{5,14-16} Due to the results from this survey, the VA placed a greater emphasis on smoking cessation than had previously existed. In doing so, a directive for smoking and tobacco use cessation programs was developed in 2003 with the purpose of outlining all policies and programs associated with smoking and tobacco use and facilities' specific requirements for implementing these programs.¹⁷ This directive established that the VA would deliver the highest standard of care to veterans who desired to quit smoking and made SCAs available to all veterans, regardless of participation in a smoking cessation program.

The progress made from the time of this directive was seen in a 2007 survey of veterans' health behaviors, which showed the prevalence of smoking had decreased to 22%, compared with a rate of 19.8% among American adults.^{18,19} Some estimates approached 30%, however, when VAMCs from different regions were evaluated separately. This estimate suggests that smoking may contribute to a greater rate of morbidity and mortality among veterans compared with the general population, especially in specific regions of the country. In December 2008, an updated directive regarding national smoking and tobacco use cessation programs replaced the 2003 directive.²⁰ The updated directive places even more importance on smoking cessation among the veteran population.

Treatment

The first comprehensive evidence-based guideline for treating tobacco use was released in 1996 by the Agency for Health Care Policy and Research (AHCPR).²¹ This guideline provided practitioners with specific information related to effective smoking cessation treatments. The



© 2010, Joe Gorman

guideline was updated in 2000, and then again in 2008, and remains the most up-to-date guideline available for the treatment of tobacco use and dependence.

In an effort to more effectively treat veterans, the VA and DoD jointly developed their own guideline for smoking cessation in 1999, with an updated version becoming available in 2004. The authors of the VA/DoD guideline state their 2004 update provides a more comprehensive approach to treating tobacco use among veterans and their families, compared with the AHCPR guideline.²²

Until recently, the VA and DoD relied on their own guideline to treat tobacco use. However, in late 2009, the VA/DoD Evidence-Based Practice Guideline Work Group decided to adopt the updated AHCPR guideline.²³ The VA/DoD work group concluded that the AHCPR guideline provides quality, evidence-based recommendations for treating tobacco use that can be used successfully in DoD and VA health care systems. The VA/DoD work group has made several modifications to the guideline for their own use, though, which will be discussed shortly.

**Table 1. Demographic characteristics of study samples
(identified smokers and nicotine patch users)**

Demographic variable	Smokers, No. % (n = 13,718)	Nicotine patch users, No. % (n = 1,294)	Patch success, No. % (n = 88)	Patch failure, No. % (n = 237)
Age, y				
18–49	3,154 (23.0)	260 (20.1)	10 (11.4)	38 (16.0)
≥ 50	10,564 (77.0)	1,034 (79.9)	78 (88.6)	199 (84.0)
Gender				
Male	12,885 (93.9)	1,194 (92.3)	80 (90.9)	220 (92.8)
Female	833 (6.1)	100 (7.7)	8 (9.1)	17 (7.2)
Race				
White	4,277 (31.2)	915 (70.7)	59 (67.1)	174 (73.4)
Black	1,023 (7.5)	154 (11.9)	12 (13.6)	27 (11.4)
Hispanic	22 (0.2)	0 (0.0)	0 (0.0)	0 (0.0)
Alaskan/Native American	6 (< 0.1)	7 (0.5)	1 (1.1)	1 (0.4)
Asian/Pacific Islander	3 (< 0.1)	6 (0.5)	0 (0.0)	1 (0.4)
Unknown	8,387 (61.1)	212 (16.4)	16 (18.2)	34 (14.4)

Currently, 7 effective first-line SCAs are available to treat tobacco use; 5 nicotine replacement therapies (patch, gum, lozenge, inhaler, and nasal spray) and 2 nonnicotine therapies (bupropion and varenicline).⁸ Pharmacotherapy has been shown to double the rate of smoking cessation compared with placebo,^{8,22,24–28} with meta-analyses reporting long-term abstinence rates approaching 18% with nicotine patches, and up to 31% with bupropion.²⁹ However, no single medication has been proven more effective than the others in initiating abstinence.

While all of these agents are used in the general population to treat tobacco use, the VA/DoD work group has made several modifications. First, they provide only 4 of the 7 first-line therapies on their formulary (including nicotine patch, nicotine gum, nicotine lozenge, and bupropion).³⁰ Second, varenicline is considered a second-line therapy, and specific criteria have been developed for its use.³¹ To be eligible to use varenicline, veteran patients must have

failed first-line treatment within the previous year and have a mental health assessment related to suicide or violence risk, as in rare instances, varenicline has been associated with violent thoughts and actions toward one's self or others.^{31,32} If patients test positive, they are required to have further evaluation by a mental health professional prior to being prescribed varenicline.

STUDY METHODS

We completed an observational, retrospective analysis of veteran patients from a single health care system comprised of 2 medical centers and 7 outpatient clinics in Tennessee and 2 outpatient clinics in Kentucky. All veteran patients who had a tobacco use clinical reminder completed in fiscal year 2008 (between October 2007 and September 2008) were included in the evaluation of the prevalence of smoking at the VATVHS.

To determine the nicotine patch success rate, we evaluated the medical records of a random sample of patients who received an outpatient

prescription for nicotine patches between October 2006 and September 2007 and had a tobacco use clinical reminder reassessed 6 to 12 months after initiation of nicotine patch therapy. The sample was randomized using a random-sampler tool in Microsoft Excel (Microsoft Corporation, Redmond, Washington). Those patients who had received a prescription for nicotine patches but had not had a tobacco use clinical reminder reassessed during the specified time period were excluded.

Demographic data, including age, sex, and gender, were obtained for all smokers, as well as all patients receiving nicotine patches. The samples and all patient data were obtained from patients' medical records using the VATVHS' computerized patient record system. These data extractions were completed by informatics specialists at the health care system. One investigator completed manual medical record extractions to determine final study eligibility. The study protocol was approved by the institutional review board and research

Table 2. Nicotine patch success rate at VATVHS vs the national average

Outcome	VATVHS observed, No. (%) (n = 325)	National average, %	P value
Success	88 (27)	17	< .05
Failure	237 (73)	83	< .05

VATVHS = VA Tennessee Valley Healthcare System.

and development committee at the VATVHS.

Statistical analyses were performed using Microsoft Excel. Using χ^2 analysis, we determined if statistical significance was present for our observed nicotine patch success rate and that of the expected success rate. We calculated that a sample of 325 patients was needed to determine statistical significance with a power of 80% and an α of .05.

RESULTS

Smoking prevalence

A total of 45,543 veteran patients had a tobacco use clinical reminder assessed during fiscal year 2008. Of these, 13,718 (30.1%) had a positive tobacco use assessment (smokers), including 12,885 (93.9%) men

Nicotine patch success rate

A total of 38,697 patients received primary care at the VATVHS between October 2006 and September 2007. We identified 1,294 patients who received a prescription for nicotine patches during this period, with a mean (SD) age of 57 (10) years. Of the veteran patients who received nicotine patches, the majority (79.9%) were aged 50 years or older, white (70.7%), and male (92.3%).

A total of 554 patients were included in the analysis of nicotine patch success rate—325 (59%) met inclusion criteria, with 300 (92.3%) of them male and 25 (7.7%) of them female. The mean (SD) age was 58 (9) years. Nicotine patch therapy was successful in 88 (27%) patients and unsuccessful in 237 (73%) patients ($P < .05$) (Table 2).

The prevalence of smoking at the VATVHS is much higher than the estimated 22.6% of Tennessee adults who smoke.

and 833 (6.1%) women (Table 1). The mean (SD) age of smokers was 57 (12) years. The majority (77%) of smokers were aged 50 years or older. Although race was unknown for most (61.1%) smokers, 31.2% were white, 7.5% were black, and 0.2% were Hispanic.

In the nicotine patch success group (n = 88), most were aged 50 years or older (88.6%), white (67.1%), and male (90.9%). The mean (SD) age of patients who successfully quit smoking was 58 (8) years. Twelve of the 39 (30.8%) black patients and 59 of the 233 (25.3%) white patients suc-

cessfully quit smoking. Eight of the 25 (32%) women and 80 of the 300 (26.7%) men successfully quit smoking. Of those who did not successfully quit smoking, the mean (SD) age was 58 (9) years.

DISCUSSION

Why the high smoking prevalence?

Smoking is a huge cause of premature death. For this reason, smoking cessation is an extremely important area of focus for practitioners. Knowing the prevalence of smoking at a specific institution is the first step in treating the disorder. In a VA survey from 2007, the prevalence of smoking nationally for veterans was 22%.^{17,18} According to internal reports from 2007, the prevalence of smoking in VISN 9, a geographically located network of VAMCs including the VATVHS, was 26.3%, 1 of the 2 highest rates among the 21 VISNs nationally. At the VATVHS, we found the prevalence of smoking is even higher, at 30.1%.

There are several possible explanations as to why the VATVHS has a higher prevalence of smoking. It could be that less emphasis is placed on smoking cessation at this facility than at other facilities across the rest of the country. Given that every VAMC follows the same directive and clinical reminders are in place for every patient, however, we do not feel this would explain all of the difference. It also may be that patients are not as health conscious overall as in other parts of the country, which could explain the higher rates of diabetes mellitus and obesity in the region as well. Other factors could involve patient motivation, environmental factors (including other family members who smoke), or lack of patient assessment and counseling.

The prevalence of smoking at the VATVHS is closer to the results from the 1999 VA survey that found 33% of veterans smoke.¹⁴ Since we do not have specific prevalence rates from the VATVHS during that time, it is difficult to determine a trend for our institution. However, the prevalence of smoking at the VATVHS is much higher than the estimated 22.6% of Tennessee adults who smoke.³³ Knowledge of the prevalence of smoking specifically at the VATVHS will give us a baseline figure to compare with future assessments of smoking prevalence to determine the trend of smoking and smoking cessation.

It seems apparent that there needs to be a higher emphasis placed on smoking cessation at the VATVHS, as the prevalence rate among its veteran patients is 8.1 percentage points (36.8%) higher than the national average. From a financial standpoint, there could be tremendous cost savings from improved treatment of smoking, as the medical expenses for smoking-related diseases are enormous, reaching \$193 billion annually.²⁶ Based on a national smoking rate of 23%, this is about \$3,852 per smoker annually. The VATVHS has a patient base of 82,159 veterans, and with a 30.1% prevalence of smoking, there would be about 24,730 patients who smoke. Assuming these numbers are all accurate, decreasing the prevalence of smoking at the VATVHS by 5% could potentially save \$16.8 million annually. While this estimate is hypothetical, the potential cost savings would be expected to be significant.

Nicotine patches more effective than expected

Nicotine patches traditionally have been the most widely prescribed SCA in VAMCs, accounting for 70% of

SCAs provided.⁵ Prior studies have shown that about 7% of veteran patients receive SCAs from the VA. In our study, 9.4% of smokers at the VATVHS received SCAs in the form of nicotine patches. This percentage does not include patients receiving other SCAs, including other nicotine replacement products (gum, lozenge, etc.) and prescription medications (bupropion and varenicline). Therefore, we are confident that the overall percentage of smokers who receive any SCA from the VATVHS is higher than the 9.4% we observed for nicotine patches alone.

With our observed success rate of smoking cessation using nicotine patches significantly higher than expected, it is appropriate to continue

to utilize nicotine patches for smoking cessation in veteran patients. It may even be appropriate to prescribe nicotine patches to patients who are not immediately interested in smoking cessation if they are agreeable to using the patches, based on a recently published review by Moore and colleagues. These authors concluded that nicotine replacement increases sustained smoking cessation rates among smokers who are unwilling or unable to quit immediately.³⁴ Therefore, there is potential for an increased number of veteran patients to successfully quit smoking, even if they are not quite ready to quit. To our knowledge, this is the first study to examine the success rate of nicotine patches specifically

in the veteran patient population. With a high relapse rate in the veteran population, we expected that the success rate would be lower than the average reported in the medical literature. However, we found that the success rate (27%) was significantly higher than national averages ($P < .05$).

An interesting finding was that only 59% of patients who received nicotine patches had a tobacco use clinical reminder reassessed 6 to 12 months after initiating patches. It is extremely important that these patients be continuously asked about their smoking status, especially if they are receiving SCAs to help them quit. If they are offered help, but do not have their smoking status reassessed,

then it seems likely that they will relapse or not quit at all. It may be appropriate for providers to receive more education about continuing to help these patients even after the initial SCA prescription.

LIMITATIONS

Several limitations to our study exist. First, there was an overall lack of tobacco use clinical reminders that were assessed during the time frame. Patients receiving primary care at the VATVHS are supposed to have these assessments completed at least annually. Unfortunately, some veteran patients will wait up to 14 to 16 months between primary care appointments. This could be 1 explanation for the decreased number of tobacco use

Decreasing the prevalence of smoking at the VATVHS by 5% could potentially save \$16.8 million annually.

assessments completed during the study period. Regardless, an attempt should be made at every possible patient encounter to document smoking status, and if positive, complete the rest of the steps in the tobacco use treatment algorithm.

Second, there are a number of patients who receive SCAs from outside the VATVHS, making it difficult to assess the actual percentage of veteran patients who attempt to quit smoking. Again, similar to the first limitation, patients who take up to 16 months to schedule a follow-up appointment after receiving nicotine patches at the VATVHS would not have had a tobacco use reassessment during the study time frame, excluding them from the study.

We did not have the resources to look at all the different SCAs used at the VATVHS; therefore, we chose to focus on the most commonly prescribed therapy. Knowing the success rate for other SCAs would be extremely beneficial, because the approach to treating veteran patients who want to quit smoking could possibly change based on other success rates.

Lastly, we were unable to assess the number of veteran patients who participated in smoking cessation clinics. These clinics have been shown to improve the rate of smoking cessation, as they are able to provide more support to the patients. The VATVHS has smoking cessation clinics available for patients wishing to participate; however, no pharmacists are involved in these clinics. The addition of a pharmacist to help in these clinics could be another potential improvement in treating tobacco use. It would be expected that veteran patients who attend these clinics and use nicotine patches may have a higher success rate than those not attending the clinics.

Of note, Tennessee is part of what is traditionally known as “tobacco country.” Tobacco country includes such states as Kentucky, Virginia, North Carolina, South Carolina, and Tennessee, all of which traditionally have relied upon growing tobacco as 1 of their largest agricultural cash crops. In 2007, 4 of these 5 states, including Tennessee, were among the 11 states with the highest prevalence of smoking.³⁵ It seems logical that growers would be more inclined to smoke; however, it seems unlikely that this would affect individuals who do not participate in the actual growing process. Furthermore, with cigarettes being so widely available at most facilities, we do not believe that this has any effect on the results of this study.

CONCLUSION

The rate of smoking among veteran patients at the VATVHS is higher than both the national and VISN averages. We could make the argument that more emphasis needs to be placed on smoking cessation at the VATVHS; however, the percentage of smokers who received nicotine patches is higher than the national average of all SCAs prescribed. With this being the case, the primary area for improvement may be that of providing better support to veterans who attempt to quit smoking. By providing better support, we could possibly increase the number of patients who successfully quit smoking. For those who are willing to attempt to quit, the continued use of nicotine patches as first-line therapy is appropriate, based on the fact that they were shown to have a higher success rate than many of the documented rates in the medical literature. Until smoking cessation success rates for other SCAs among veteran patients are made available, we promote the use of nicotine

patches as first-line therapy for smoking cessation in the veteran population.

Author disclosures

The authors report no actual or potential conflicts of interest with regard to this article.

Disclaimer

The opinions expressed herein are those of the authors and do not necessarily reflect those of Federal Practitioner, Quadrant HealthCom Inc., the U.S. Government, or any of its agencies. This article may discuss unlabeled or investigational use of certain drugs. Please review complete prescribing information for specific drugs or drug combinations—including indications, contraindications, warnings, and adverse effects—before administering pharmacologic therapy to patients.

REFERENCES

- Centers for Disease Control and Prevention (CDC). Annual smoking-attributable mortality, years of potential life lost, and productivity losses—United States, 1997–2001. *MMWR Morb Mortal Wkly Rep.* 2005;54(25):625–628.
- Centers for Disease Control and Prevention (CDC). Annual smoking-attributable mortality, years of potential life lost, and economic costs—United States, 1995–1999. *MMWR Morb Mortal Wkly Rep.* 2002;51(14):300–303.
- The Health Consequences of Smoking: A Report of the Surgeon General.* Washington, DC: US Dept of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health; 2004. http://www.cdc.gov/tobacco/data_statistics/sgr/2004/complete_report/index.htm. Accessed September 21, 2010.
- Centers for Disease Control and Prevention (CDC). Cigarette Smoking Among Adults—United States, 2006. *MMWR Morb Mortal Wkly Rep.* 2007;56(44):1157–1161.
- Jonk YC, Sherman SE, Fu SS, Hamlett-Berry KW, Geraci MC, Joseph AM. National trends in the provision of smoking cessation aids within the Veterans Health Administration. *Am J Manag Care.* 2005;11(2):77–85.
- McKinney WP, McIntire DD, Carmody TJ, Joseph A. Comparing the smoking behavior of veterans and nonveterans. *Public Health Rep.* 1997;112(3):212–217.
- Bray RM, Marsden ME, Peterson MR. Standardized comparisons of the use of alcohol, drugs, and cigarettes among military personnel and civilians. *Am J Public Health.* 1991;81(7):865–869.
- Fiore MC, Jaén CR, Baker TB, et al. *Clinical Practice Guideline. Treating Tobacco Use and Dependence.*

- 2008 Update. Rockville, MD: US Dept of Health and Human Services, Public Health Service; May 2008. http://www.surgeongeneral.gov/tobacco/treating_tobacco_use08.pdf. Accessed September 21, 2010.
9. Tønnesen P, Nørregaard J, Simonsen K, Sæwe U. A double-blind trial of a 16-hour transdermal nicotine patch in smoking cessation. *N Engl J Med*. 1991;325(5):311–315.
 10. Richmond RL, Kehoe L, de Almeida Neto AC. Three year continuous abstinence in a smoking cessation study using the nicotine transdermal patch. *Heart*. 1997;78(6):617–618.
 11. Hays JT, Croghan IT, Schroeder DR, et al. Over-the-counter nicotine patch therapy for smoking cessation: Results from randomized, double-blind, placebo-controlled, and open label trials. *Am J Public Health*. 1999;89(11):1701–1707.
 12. Shiffman S, Gorsline J, Gorodetzky CW. Efficacy of over-the-counter nicotine patch. *Nicotine Tob Res*. 2002;4(4):477–483.
 13. Sønderskov J, Olsen J, Sabroe S, Meillier L, Overvad K. Nicotine patches in smoking cessation: A randomized trial among over-the-counter customers in Denmark. *Am J Epidemiol*. 1997;145(4):309–318.
 14. Miller DR, Kalman D, Ren XS, Lee AF, Niu Z, Kazis LE; Office of Quality and Performance, Veterans Health Administration. *Health Behaviors of Veterans in the VHA: Tobacco Use. 1999 Large Health Survey of VHA Enrollees*. Washington, DC: Veterans Health Administration; 2001.
 15. Klevens RM, Giovino GA, Peddicord JP, Nelson DE, Mowery P, Grummer-Strawn L. The association between veteran status and cigarette-smoking behaviors. *Am J Prev Med*. 1995;11(4):245–250.
 16. Centers for Disease Control and Prevention (CDC). Cigarette smoking among adults—United States, 1999. *MMWR Morb Mortal Wkly Rep*. 2001;50(40):869–873.
 17. US Department of Veterans Affairs. *National Smoking and Tobacco Use Cessation Program*. Washington, DC: US Dept of Veterans Affairs, Veterans Health Administration; August 6, 2003. VHA Directive #2003-042. http://www.publichealth.va.gov/documents/VHA_Directive_2003_042.pdf. Accessed July 30, 2008.
 18. US Department of Veterans Affairs. *2007 Survey of Veteran Enrollees' Health and Reliance Upon VA*. Washington, DC: US Dept of Veterans Affairs, Veterans Health Administration, Office of the Assistant Under Secretary for Health for Policy and Planning; June 2008.
 19. Centers for Disease Control and Prevention (CDC). State-specific prevalence and trends in adult cigarette smoking—United States, 1998–2007. *MMWR Morb Mortal Wkly Rep*. 2009;58(9):221–226.
 20. US Department of Veterans Affairs. *National Smoking and Tobacco Use Cessation Program*. Washington, DC: US Dept of Veterans Affairs, Veterans Health Administration; November 26, 2008. VHA Directive #2008-081. http://www1.va.gov/VHAPUBLICATIONS/ViewPublication.asp?pub_ID=1809. Accessed September 21, 2010.
 21. Agency for Healthcare Policy and Research. *Smoking Cessation: Clinical Practice Guideline*. Washington, DC: US Dept of Health and Human Services, Agency for Healthcare Policy and Research; April 1996. No. 18. AHCPR Publication No. 96-0692.
 22. US Department of Veterans Affairs Office of Quality and Performance. Veterans Health Administration/Department of Defense Clinical Practice Guideline on Management of Tobacco Use (rescinded). <http://www.oqp.med.va.gov/cpg/tuc3/G/TUC-2004.pdf>. Accessed July 28, 2008.
 23. Management of tobacco use. VA/DoD Clinical Practice Guidelines Web site. http://www.healthquality.va.gov/Management_of_Tobacco_Use_MTU.asp. Accessed September 21, 2010.
 24. Centers for Disease Control and Prevention. *The Health Benefits of Smoking Cessation: A Report of the Surgeon General*. Atlanta, GA: US Dept of Health and Human Services, Centers for Disease Control and Prevention, Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health; 1990. DHHS Pub. No. (CDC) 90-8416. http://profiles.nlm.nih.gov/NN/B/B/C/T/_/nnbbct.pdf. Accessed September 21, 2010.
 25. Burton SL, Gitchell JG, Shiffman S; Centers for Disease Control and Prevention (CDC). Use of FDA-approved pharmacologic treatments for tobacco dependence—United States, 1984–1998. *MMWR Morb Mortal Wkly Rep*. 2000;49(29):665–668.
 26. Centers for Disease Control and Prevention. *Best Practices for Comprehensive Tobacco Control Programs—2007*. Atlanta, GA: US Dept of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health; 2007.
 27. Vista: Clinical Reminders Version 2.0. Clinical guide. US Department of Veterans Affairs Web site. http://www.va.gov/vdl/documents/Clinical/CPRS-Clinical_Reminders/pxrm_2_4_um.pdf. Accessed September 7, 2008.
 28. Hopkins DP, Husten CG, Fielding JE, Rosenquist JN, Westphal LL. Evidence reviews and recommendations on interventions to reduce tobacco use and exposure to environmental tobacco smoke: A summary of selected guidelines. *Am J Prev Med*. 2001;20(suppl 2):67–87.
 29. Coffield AB, Maciosek MV, McGinnis JM, et al. Priorities among recommended clinical preventive services. *Am J Prev Med*. 2001;21(1):1–9.
 30. VHA Pharmacy Benefits Management Services, Medical Advisory Panel; Tobacco Use Cessation Technical Advisory Group; Public Health Strategic Healthcare Group. *Recommendations for Use of Combination Therapy in Tobacco Use Cessation*. Washington, DC: US Dept of Health and Human Services, US Dept of Veterans Affairs, VHA Pharmacy Benefits Management Services, Medical Advisory Panel; April 2009. http://www.healthquality.va.gov/tuc/tuc_combination_therapy.pdf. Accessed September 21, 2010.
 31. VA Center for Medication Safety, Tobacco Use Cessation Technical Advisory Group, Public Health Strategic Healthcare Group, VA Pharmacy Benefits Management Services, VISN Pharmacist Executives, and Medical Advisory Panel. *Varenicline Criteria for Prescribing*. US Dept of Health and Human Services, US Dept of Veterans Affairs, VA Center for Medication Safety, Tobacco Use Cessation Technical Advisory Group; February 2010. http://www.healthquality.va.gov/Management_of_Tobacco_Use_MTU.asp. Accessed September 21, 2010.
 32. Chantix [package insert]. New York, NY: Pfizer Inc; April 2010.
 33. Tennessee makes significant strides in protecting citizens from impacts of tobacco use. Tennessee Department of Health Web site. <http://health.state.tn.us/newsreleases/011108.htm>. Published January 11, 2008. Accessed September 21, 2010.
 34. Moore D, Aveyard P, Connock M, Wang D, Fry-Smith A, Barton P. Effectiveness and safety of nicotine replacement therapy assisted reduction to stop smoking: Systematic review and meta-analysis. *BMJ*. 2009;338:b1024. doi: 10.1136/bmj.b1024.
 35. Davis S, Malarcher A, Thorne S, Maurice E, Troscclair A, Mowery P; Centers for Disease Control and Prevention (CDC). State-specific prevalence and trends in adult cigarette smoking—United States, 1998–2007. *MMWR Morb Mortal Wkly Rep*. 2009;58(09):221–226.