An Innovative Tobacco Use Cessation Program for Military Dental Clinics

Lemuel L. Covington, COL DC; Lawrence G. Breault, COL DC; John J. O’Brien, LTC MC; Cathy H. Hatfield, RDH; Shana M. Vasquez, LDH; Robert W. Lutka, COL DC

Abstract

Tobacco use is the chief avoidable cause of death and illness in our society. Military leaders are concerned with rising medical costs and the related negative effects on combat readiness associated with tobacco use. Tobacco use cessation (TUC) programs available in the military services have not reached their full potential. Dental officers have an opportunity to assume a more active role as first-line providers in TUC programs.

This paper presents a model TUC program for use in military dental clinics. It emphasizes the dentist’s role in directly prescribing pharmacologic agents in nicotine replacement therapy (NRT) combined with appropriate patient counseling. Other key elements of this TUC program include the non-threatening manner in which patients are offered access to TUC, its convenience when compared with other programs, and the minimal cost to implement this program.

Keywords: Tobacco use cessation, TUC programs, smoking effects

Introduction
Tobacco use is the chief avoidable cause of illness and death in our society. According to the latest data from the Centers for Disease Control and Prevention (CDC), cigarette smoking in the United States causes serious illnesses such as cancer, heart disease, stroke, chronic obstructive pulmonary disease, pregnancy complications, and osteoporosis. Cigarette smoking is ultimately responsible for approximately 440,000 deaths annually, resulting in 157 billion dollars in health-related economic costs.1

Additionally, smoking has a direct effect on oral health. Significant data has been published demonstrating the relationship between smoking and periodontal disease.23 Specifically, smokers are four times as likely to have periodontal disease and three times as likely to present with severe disease as non-smokers.9 10

Despite all of the known health risks, rising public sentiment against cigarette smoking, and stronger tobacco control legislation in recent years11, the Army did not meet its goal to comply with the U.S. Public Health Service’s Healthy People 2000 objective of no more than 20% of military personnel continuing to smoke and no more than 4% of men aged 24 or younger continuing to use smokeless tobacco (SLT) products.12 13 The smoking rate in the military services continues to mirror society overall and ranges from 25% to 30%.1 14 16

Detrimental Effects of Tobacco Use on the Armed Forces
Military leaders are concerned with the staggering costs to the Department of Defense (DOD) associated with tobacco use and the related negative effects on combat readiness of units with a high percentage of smokers. Military tobacco users recently cost the DOD $130 million per year in excess training costs15, $20 million per year in medical costs, and $87 million per year in lost workdays, which represents a loss of approximately 3,573 full-time equivalent (FTE) positions per year.16

In addition to effects on lungs, the cardiovascular system, and dental health, tobacco use has other deleterious effects on the performance of military personnel. Smoking decreases aerobic fitness leading to lower Army Physical Fitness Test (APFT) scores.17 18 The number and severity of musculoskeletal injuries increase during training, and recovery from these injuries is prolonged in smokers when compared to non-smokers.19 22 Smoking is associated with increased risk of being involved in accidental injuries resulting in trauma such as motor vehicle crashes, fall injuries, and blunt contusions.23 Female smokers miss training more often because of intensified menstrual symptoms and cycle disorders.24

One study concluded the best single predictor of early discharge from military service was smoking status.25 Smoking among military members has even been linked with increased suicide. Persons smoking more than 20 cigarettes a day were more than twice as likely to commit suicide as non-smokers.25

Like cigarette smoking, SLT such as chewing tobacco and snuff produce addiction to nicotine and have serious systemic and oral health consequences. SLT use remains prevalent in the military, especially among young male service members. Over 22% of servicemen aged 18 to 24 use SLT1, while 50% of U.S. Army Rangers reported using either snuff or chewing tobacco.26

Review of the Effectiveness of Military Tobacco Use Cessation Programs
Studies indicate 25-44% of recruits are smokers upon entry into military service.13 27 29 The military has been largely unsuccessful in its attempts to force tobacco use cessation (TUC) on incoming recruits who smoke.27 28 Cigarette smoking and SLT are not allowed during Basic Training (BT), which varies in length among services from 6-10 weeks. Tobacco use counseling and support for those who truly wish to quit is not available, and as a result, the relapse rate with return to full-time tobacco use within one month following completion of BT is as high as 70%.30

It is clearly evident more TUC Programs are needed throughout the military system.4 13 27-29 Although there are examples of successful TUC programs in military hospitals and medical clinics54-58, military physicians and other health care providers often do not have specific training.
for TUC, do not always have the necessary resources, do not offer TUC advice or programs often enough, or do not believe they can effectively counsel patients.

Many health care providers feel uncomfortable or hypocritical providing TUC counseling to patients because they have not set the example by eliminating their own smoking habits. In addition some physicians have mixed opinions on whether using pharmacologic interventions in TUC programs is effective. These shortcomings in the existing medically-sponsored TUC programs create a golden opportunity for military dentists to step up and assume a more active role as first-line providers in TUC.

**U.S. Army Dental Command is Taking a Bigger Role in TUC**

In an effort to take a more active role in TUC, the U.S. Army Dental Command (DENCOM) has implemented a program making it mandatory for dental providers to assess tobacco use of military personnel both during dental examinations and at subsequent dental appointments. Military members are required to receive an annual dental examination each year, which presents a continuing opportunity to offer tobacco cessation counseling.

Dental providers input tobacco use data obtained during these dental visits into a Corporate Dental Application (CDA) database. CDA shows great promise as an aid for identifying individuals or units having a high percentage of tobacco users. Local dental clinics can then use this information to offer these groups access to TUC Programs.

Although there are examples of successful dentist-led TUC programs in the civilian sector and in other uniformed services, we are unaware of any other published reports of dentist-driven TUC programs at Army dental facilities.

**A Dentist-Driven TUC Program**

In November, 2002 the Fort Benning Dental Activity began a dentist-driven TUC program. This TUC program provides clinic level patient education and counseling. It is designed to empower dental officers with the ability to directly prescribe smoking cessation pharmacologic agents.

The intent is for this TUC program to serve as the model for the Army Dental Care System. Although this program is used in an Army Dental Clinic, the format is applicable for implementation by other services or the civilian sector. The key program components are outlined below:

1. Patients identified as smokers are continually assessed and counseled during routine dental visits beginning with the initial annual dental examination.
2. Patients expressing a willingness to participate in a formal tobacco cessation program are offered three alternatives available locally:
   a. Lunch-time TUC classes in the Family Practice Clinic.
   b. Evening classes at the Internal Medicine Clinic.
   c. DENTAC TUC program incorporated within the Dental Clinic in conjunction with normal dental visits.
3. Patients opting for the DENTAC TUC program will complete the following:
   a. Registration with the Program Coordinator. This is generally the community health registered dental hygienist (RDH) or equivalent. Patients complete MEDCOM Form 709-R (Medical Record – Tobacco Cessation Documentation) (Figure 1 & Figure 2). This form documents tobacco use history, previous cessation attempts, smoking cessation aids, reasons for wanting to quit, etc. It also includes a health history and action plan designed by the dental officer.
   b. View a tobacco cessation video and discuss it with the Program Coordinator, as necessary.
   c. Assessment and counseling by a clinician using MEDCOM Form 709-R. The dental officer completes a health history, reviews precautions and indications for nicotine replacement therapy (NRT) medications, and completes a patient physical assessment.
   d. Formulation of the action plan, which may include the dental officer prescribing pharmacologic agents such as the nicotine patch or oral bupropion (Zyban) tablets.
   e. Reschedule the patient in two weeks for assessment of progress utilizing a local follow-up form (Figure 3). The dental officer counsels the patient to determine...
## MEDICAL RECORD – TOBACCO CESSION DOCUMENTATION

For use of this form see MEDCOM Circular 4C-1

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>ALLERGY:</td>
<td>MEDICATIONS:</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

## SECTION I - VITAL SIGNS (Completed by Technician)

### TIME:
- BP:
- PULSE:
- RESP:
- TEMP:
- HT:
- WT:

### ALLERGY:

### MEDICATIONS:

## SECTION II - PATIENT ASSESSMENT (Completed by Patient/Reviewed by Provider)

1. At what age did you start using tobacco? ______
2. What type(s) and amount(s) of tobacco do you use?

<table>
<thead>
<tr>
<th>TYPE(S)</th>
<th>YES</th>
<th>NO</th>
<th>AMOUNT(S)</th>
<th>PER DAY</th>
<th>PER MONTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Cigarette</td>
<td>Packs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Pipe</td>
<td>Bowls</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Cigar</td>
<td>Cigars</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Snuff</td>
<td>Cans</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. Chew</td>
<td>Pouch</td>
<td></td>
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</tr>
</tbody>
</table>

3. How soon after you wake up do you use tobacco?  
   - [ ] After 30 minutes  
   - [ ] Within 30 minutes

4. Have you quit before?  
   - [ ] Yes  
   - [ ] No

5. How many times have you quit before? ______

6. What was the longest period you were able to quit? _______________

7. What caused you to start using tobacco again?

8. Did you use any of the following to help you quit?  
   - [ ] Patch  
   - [ ] Gum  
   - [ ] Zyban  
   - [ ] Inhaler  
   - [ ] Nasal Spray  
   - [ ] Individual Counseling  
   - [ ] Formal Program  
   - [ ] Other _______________

9. Why do you want to quit tobacco use?  
   - [ ] Financial Saving  
   - [ ] Breathing Problems  
   - [ ] Heart Problems  
   - [ ] Fear of Cancer  
   - [ ] Family/Social Pressure  
   - [ ] Other Issues _______________

10. What support do you have available to help you quit tobacco use?  
    - [ ] Family  
    - [ ] Friends  
    - [ ] Work  
    - [ ] Other _______________

11. What type of program do you believe would help you the most?  
    - [ ] Group  
    - [ ] One on One  
    - [ ] Counseling  
    - [ ] Self Quit

## PATIENT'S IDENTIFICATION (For typed or written entries give: Name - last, first, middle, gender, dates, hospital or medical facility)

(Patient’s Signature/Date)

Figure 1: MEDCOM Form 709-R (Side 1)
**SECTION III - MEDICAL HISTORY AND PHYSICAL ASSESSMENT (Completed by Health Care Provider)**

**MEDICAL HISTORY**

Medications Reviewed: ❑ Yes ❑ No  Allergies Reviewed: ❑ Yes ❑ No  LMP: __________

ETOH: ❑ Yes ❑ No  ❑ Cut Down  ❑ Annoyed  ❑ Guilty  ❑ Eye Opener

During the past month have you been bothered by:  Feeling down, depressed, or hopeless  ❑ Yes ❑ No

Little interest or pleasure in doing things  ❑ Yes ❑ No

PMH affecting use of NRT/Bupropion:

<table>
<thead>
<tr>
<th>PRECAUTIONS/CONTRAINDICATIONS</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Head Trauma</td>
<td></td>
<td></td>
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<tr>
<td>Seizures</td>
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<td></td>
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<tr>
<td>Chronic Pain Disorder</td>
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<tr>
<td>Liver Disease</td>
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<tr>
<td>Hyperthyroidism</td>
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<tr>
<td>Kidney Disease</td>
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<tr>
<td>Pregnancy</td>
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<tr>
<td>Lactating</td>
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<tr>
<td>Substance Abuse</td>
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<tr>
<td>Eating Disorder</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post Traumatic Stress Disorder</td>
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</tr>
</tbody>
</table>
| Anxiety                      |     | Other:

Physical Assessment:

**SECTION IV - ASSESSMENT (Completed by Health Care Provider)**

**PRIMARY ASSESSMENT:** Tobacco Cessation V65.49.4 (DOD unique extender)  ICD - 9-CM 305.1

**SECTION V - ACTION PLAN (Completed by Health Care Provider)**

1. **MEDICATIONS:** NRT Prescribed? ❑ Yes ❑ No
   - Transdermal Nicotine (Contraindicated in Pregnancy) ❑ Yes ❑ No
   - 7 Mg x ___ weeks ❑ 14 Mg x ___ weeks
   - 21 Mg x ___ weeks ❑ ___ Mg x ___ weeks
   - Polacrilex Nicotine PRN
   - Other: ___ Bupropion SR 150 mg ___ po.qd x ___ days, then ___ bid.

2. **Tobacco Cessation Counseling:**
   - Patient congratulated on decision to quit tobacco usage: Quit Date: ____________
   - Patient advised to avoid all tobacco products during NRT.
   - Tobacco cessation benefits reviewed.
   - Patient advised of withdrawal symptoms.
   - Patient concerns and support systems addressed.
   - Patient advised to take medication as directed.
   - Educational materials given to patient.

3. **What type of tobacco cessation program would you like to participate in?**
   - Formal  ❑ Group  ❑ Behavior Modification  ❑ One on One  ❑ Self Quit Program

4. **Referral To:**
   - Stress Management  ❑ Dietary  ❑ Other: ____________

5. **Follow-Up Appointment with in 2 weeks:** ____________

(Provider’s Signature/Date)

MEDCOM FORM 709-R (TEST) (MCHO) MAY 2001, Back

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**Figure 2:** MEDCOM Form 709-R (Side 2)
DENTAC TUC 2 WEEK FOLLOW-UP

1. Have you completed your prescribed medication?
   ___ Yes     ___ No     ___ N/A

2. Have you been able to stop all tobacco use since you started the TUC program?
   ___ Yes     ___ No

3. If you have not been able to stop tobacco use, why do you feel you have not been successful?
   ___ Stress from work or home    ___ Altered work schedule
   ___ Lack of family/friends support ___ Lost interest in quitting
   ___ Other

4. Do you feel the DENTAC TUC program has helped you in your attempt to quit tobacco use?
   ___ Yes     ___ No

5. 2-Month follow-up appointment __________________________

6. 3-Month follow-up appointment __________________________

TUC Treatment Plan:

___ Continue NRT
___ Continue Zyban
___ Prescription made (for additional 2 weeks)
___ Patient instructed to telephone Ms. Hatfield (554-1503) to receive additional prescriptions after 2 weeks.

__________________________
Provider Signature/Date

Name/Rank: __________________________
SSN: __________________________
Unit/Phone: __________________________
Date entered TUC: __________________________

Figure 3: TUC 2-Week follow-up form
The need for additional medication, patient-specific counseling, and/or “problem solving.” Additional intermediate sessions are scheduled on an individual basis.

f. Follow-up of the patient at two weeks, one month, three months, six months, and one year are critical to determine success of long-term results, to identify reasons for failure, to provide relapse prevention counseling, and to provide guidance for failures to reenter the tobacco cessation program.

**TUC Medication**

Below is a review of the recommended use of the nicotine patch and oral bupropion (Zyban) tablets, the primary NRT medications used in the Fort Benning Dental Activity TUC program. When prescribed appropriately, both the nicotine patch and bupropion are safe, well-tolerated, and effective. They do not decrease psychomotor performance, therefore, there are no restrictions to duty for patients using these medications.

Other medications also may be substituted or incorporated based on local requirements and pharmacy support. Nicotine gum, nasal sprays, or inhalers are other modalities often used, but have been shown to be less cost-effective and successful than nicotine patches and Zyban. Oral transmucosal nicotine (OT-NIC) lozenges and oral selegiline, when used in combination with nicotine patches, show promise as future NRT options.

**Nicotine Patch (Nicotine Transdermal System – Nicoderm™)**

The medication functions by binding to acetylcholine receptors at autonomic ganglia in the adrenal medulla, at neuromuscular junctions, and in the brain (Figure 4). It is generally

<table>
<thead>
<tr>
<th>Prescribing Instructions</th>
<th>Dosages</th>
<th>Contraindications</th>
<th>Precautions</th>
<th>Adverse Reactions</th>
<th>Drug Interactions of Concern to Dentistry</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Smoking: Refrain from smoking while using patch. 2. Location: At the start of the day, the patient should place a new patch on a relatively hairless location between the neck and waist. 3. Activities: No restrictions 4. Time: Patches should be applied as soon as the patient awakens on their quit day.</td>
<td>First 4 weeks: 21 mg/24 hours  Next 2 weeks: 14 mg/24 hours  Last 2 weeks: 7 mg/24 hours</td>
<td>Hypersensitivity, pregnancy, lactation, nonsmokers, use during immediate post MI, life threatening dysrhythmias, severe or worsening angina pectoris, hypertension.</td>
<td>Skin disease, angina pectoris, MI renal or hepatic insufficiency, peptic ulcer, serious cardiac dysrhythmias, hyperthyroidism, pheochromocytoma, insulin-dependent diabetes, pregnancy, elderly.</td>
<td>Dry mouth, abnormal dreams, insomnia, nervousness, headache, dizziness, paresthesia, diarrhea, dyspepsia, constipation, nausea, abdominal pain, vomiting, erythema, puritus, rash, burning at application site, cutaneous hypersensitivity, sweating, arthalgia, myalgia.</td>
<td>Decreased dose at cessation of smoking: acetaminophen, caffeine, oxazepam, pentazocine. Decreased metabolism of propoxyphene.</td>
</tr>
</tbody>
</table>

Table 1. Prescription information for Nicoderm™.
reserved for those patients smoking 10-15 cigarettes per day or more. Nicoderm may also be efficacious in smokeless tobacco cessation.\textsuperscript{61, 62}

Prescription information is presented in Table 1.

**Bupropion HCL (Zyban, Wellbutrin\textsuperscript{TM})**

Bupropion HCL is a week uptake inhibitor of dopamine, serotonin, and norepinephrine (Figure 5). Its antidepressant and smoking cessation mechanism is unknown. Prescription information is presented in Table 2.

**NRT Combined with Counseling**

One key aspect is the one-on-one counseling and support the patient receives while participating in the TUC program. Although patients can obtain products such as nicotine patches and gum without a doctor’s prescription, long-term success rates are dramatically reduced when they attempt to quit smoking on their own. Patients often become disappointed and frustrated, and as a result, prematurely give up in their attempt to quit.

Patients often misuse over-the-counter NRT products, leading to abuse and/or problems from side-effects.\textsuperscript{64-67} Therefore, the best results occur when NRT is combined with supportive counseling.\textsuperscript{52, 68-72} Recent studies demonstrate successful one-year quit rates in the 20\%-30\% range for TUC programs using the combined NRT and counseling approach.\textsuperscript{35, 68, 69, 74}

In addition effective TUC counseling can help military members overcome some of the common obstacles that make them reluctant to stop tobacco use. Many smokers claim they smoke primarily to relieve stress, however, nicotine dependency is actually associated with heightened stress.\textsuperscript{47, 75}
Weight gain associated with smoking cessation is a particular concern, as some military members are reluctant to quit smoking because of the possible negative administrative consequences for individuals exceeding weight standards.

Smoking is sometimes a coping mechanism for underlying psychosocial problems. According to one study, females with a history of abuse prior to entering military service were nearly three times as likely to be nicotine dependent as non-smokers, and males previously exposed to combat or other violence were twice as likely to be nicotine dependent as those not exposed.

There is a long-standing belief among military members that SLT use prevents drowsiness and increases awareness during combat operations, but a review of the literature revealed no studies to support this concept. Although most military members believe SLT use does not lead to future cigarette smoking, studies are inconclusive as to whether SLT use is a starter product for subsequent smoking.

Counseling Techniques
Our TUC Program uses aspects of Brief Intervention, or simply advising the patient to quit smoking at each clinical encounter and offering access to the TUC Program. We also use elements of the 5 A’s (Ask, Advice, Assess, Assist, and Arrange) in our program. Other counseling techniques available include Brief Motivational Interviewing (BMI) and the Teachable Moment (TM).

For any counseling method to be successful, the patient must be willing to stop using tobacco products, take personal ownership of the problem, and actively participate in the process. Continuous, structured, and composite efforts are needed for maintenance of the non-smoking behavior.

The U.S. Department of Health and Human Services, Agency for Health Care Policy and Research (AHCPR) Publication No. 96-0692 makes the following specific recommendations:

A. Every person who smokes should be offered smoking cessation treatment at every office visit.

B. Clinicians should ask and record the tobacco-use status of every patient.

C. Cessation treatments even as brief as 3 minutes per visit are effective.

D. More intense treatment is more effective in producing long-term abstinence.

E. NRT, clinician-delivered social support, and skills training are particularly effective components of smoking cessation treatment.

F. The systematic identification of, and intervention with, all tobacco users at every visit.

Dental officers, RDHs, and other auxiliaries have traditionally provided A, B, C, and F above, generally at every patient visit when appropriate. Historically, the use of pharmacologic agents in tobacco cessation has not been part of the dental armamentarium.

Key Elements of this Dental TUC Program
1. The program is not forced upon patients. It allows patients to access the program on their timeline when they are ready to quit smoking.
2. Dental officers directly prescribe NRT pharmacological agents instead of referring TUC patients to a physician to receive the prescriptions.
3. Patients enjoy the program’s convenience. Generally, they can leave with a physical assessment, initial TUC counseling, and an individualized TUC treatment plan (with NRT prescriptions as necessary) on day one of the program.
4. Minimal costs to administer the program in terms of personnel and supply needs.

Conclusion
The Fort Benning Dental Activity has successfully implemented this TUC program. To date, over 500 patients have participated in the program. Establishing similar programs of this type throughout DENCOM will significantly increase patient access to treatment. This model TUC program empowers dental providers with the tools to take a leading role in assisting military members in tobacco use cessation.
References


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