

Serving Underserved and Hard-Core Smokers in a Dental School Setting

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Abstract: The dental profession has recognized tobacco cessation as an important part of comprehensive dental care, yet implementation of the Public Health Service clinical practice guideline on "Treating Tobacco Use and Dependence" remains a challenge. This is especially the case for patients presenting in dental clinics for whom smoking represents a large financial burden. Many of these smoking-addicted patients also present with multiple risk factors: dental, medical, and psychiatric. Innovative approaches are necessary to reduce barriers to providing smoking cessation services to underserved and high-risk smokers. A tobacco cessation clinic in a dental school setting provides an opportunity for dental students to learn about the management of difficult-to-treat cases and to bring their enhanced intervention skills back into the primary care dental setting. This paper describes a multidisciplinary approach to tobacco cessation in a dental school clinic within an academic medical center.

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Multiple oral health problems such as periodontal disease (including poor treatment outcomes and dental implant failures), oral cancer, leukoplakia, and tooth loss are related to tobacco use.¹⁻³ A review of smoking-attributable periodontitis from the National Health and Nutrition Examination Survey (NHANES III) reveals that, among current smokers, three-fourths of their periodontitis can be linked to their smoking.⁴ Cosmetic conditions such as tobacco stains and halitosis are also more difficult to treat successfully in smokers.⁵ Given the effect of tobacco use on oral health, the dental office may be an ideal place for tobacco cessation intervention, especially since a large proportion of smokers visit their dentist on a regular basis. Dentists often see smokers for routine preventive dental care when they are younger and healthier than primary care physicians whose patients are usually older and require management of medical problems.

The 2000 U.S. Public Health Service clinical practice guideline, "Treating Tobacco Use and Dependence," recognizes dentists among those primary care clinicians "most relevant" to providing brief interventions for smokers. The guideline serves as an excellent reference source for dental faculty, clini-

cians, and researchers interested in tobacco cessation.⁶ Another resource, addressed specifically to the dental profession, is the April 2001 issue of the *Journal of Dental Education*, which was devoted to tobacco and oral disease. This issue provides an extensive overview of recent developments in dental practice, education, and research, along with strategies for dental professional interventions as it relates to tobacco usage.⁷

Major organizations within the dental profession, such as the American Dental Association (ADA), the International Association for Dental Research (IADR), and the American Dental Education Association (ADEA), have recognized tobacco cessation as an important part of comprehensive dental care. In response to this need, the Tobacco Cessation Clinic at the Columbia University School of Dental and Oral Surgery was established in 1996 as a joint venture with the Columbia University Behavioral Medicine Program. The program was initiated with two primary goals: 1) to educate health science students and health care providers in the current methodology of treating tobacco use and dependence, and 2) to provide tobacco cessation counseling to patients.

Smoking Cessation in Primary Care

Office-based interventions constitute a combination of cessation advice by the clinician, self-help literature, setting a quit date, using nicotine replacement therapy (NRT), and one or more recall visits for reinforcement and support. Currently, most tobacco cessation interventions are provided by physicians, although it has been demonstrated that all health care providers can be effective and that dental schools can have a central role in an interdisciplinary approach to tobacco cessation at academic medical centers.^{6,8}

The cessation advice provided in dental offices has been described as “rather ad hoc and somewhat superficial.”⁹ Less than 20 percent of dentists use an office-based smoker identification system,¹⁰ and fewer than 5 percent provide follow-up services to help patients quit.¹¹ A study that attempted to compare the quality and quantity of tobacco cessation services provided by different health care providers, including physicians, dentists, mental health counselors, and social workers, concluded that cessation interventions by dental providers ranked lowest in terms of both quantity and quality.¹² Dentists were least likely to have a routine smoker identification system, to explain the dangers of smoking, or to advise patients to stop smoking. In addition, dentists were least likely to provide specific cessation activities such as setting a quit date or prescribing nicotine replacement therapy (NRT). The scarcity of didactic and clinical experience in dental school contributes to the dental clinician’s failure to address tobacco use by his or her patients.

The evidenced-based clinical practice guideline, “Treating Tobacco Use and Dependence,” can serve as the basis for educating dentists about flagging patients’ smoking behaviors and advising them to quit.¹³ The guideline provides an overview of research-supported intervention strategies (including medications) designed and tested to help smokers. A brief structured approach with five steps called the “5 As” (Ask about tobacco use; Advise to quit; Assess willingness to make a quit attempt; Assist in quit attempt; and Arrange follow-up) has been developed to intervene with smokers in the primary care setting.¹³ The proper management of the patient requires an understanding of when it is appropriate to utilize the five A’s in practice and, alternatively, when a

patient’s tobacco addiction requires referral and treatment within a more comprehensive setting.

Tobacco Cessation for Complex Cases

The Columbia University Tobacco Cessation Clinic takes a bio-psycho-social perspective in assessing tobacco dependence and in developing individual treatment plans. This model views addiction as the complex interaction of three factors: the individual, the environment, and the drug itself.¹⁴

The physiological and behavioral level of nicotine dependence is assessed using the Fagerstrom Test for Nicotine Dependence.¹⁵ This is a simple six-item questionnaire that predicts response to nicotine gum.¹⁶ Psychiatric comorbidity (in particular, depression and anxiety) and other substance abuse (in particular, alcoholism) are assessed using a brief patient problem questionnaire.^{17,18} Information on any medical disease caused or contributed to by tobacco is also elicited.

The psychology (behavioral conditioning) of tobacco addiction is assessed by monitoring a sample of each smoker’s environmental and emotional triggers. These are stimuli (external/situational or internal/subjective to the person) associated with current smoking behavior. These triggers are then used to evaluate potential future relapse back to smoking after cessation. Developing alternative behavioral strategies to smoking is a key component to preparing for a quit day and to helping promote the individual’s subsequent adjustment after cessation.

The social environment of the smoker is assessed by identifying others (friends, spouses, supervisors, coworkers) who smoke openly in his or her environment. How to avoid, or be assertive with, other smokers is part of the cognitive-behavioral therapy used by all members of the clinic team. Newly abstinent smokers may also need to adjust to cultural influences and events (such as advertising or social gatherings), as well as to their own personal stressors, without turning to cigarette smoking as a coping tool.

Patient Population

Patients in the study were primarily Latino and African American smokers who live in the Washing-

ton Heights section of New York City surrounding the Columbia Presbyterian Medical Center. Many present with multiple risk factors, both medical and psychiatric (Table 1). Because of low socioeconomic status, smoking for most of our patients represents a large financial burden. The program evaluation reported later in this paper in the "Treatment Outcomes" section was based on fifty-one patients enrolled in the clinic over a six-month period in 1999.

Referral Network

Patients are referred primarily through the dental school and two community-based medical clinics run by the medical center. Brochures describing the clinic's services in English and Spanish are widely distributed to these medical clinics. Some patients are self-referred by word-of-mouth from existing clinic patients. Many patients are referred because prior attempts at cessation have been unsuccessful in the primary care setting. Figure 1 provides an overview of patient referral sources and clinic operations.

Table 1. Patient characteristics

N=51		
Gender	Male 19 (37.3%)	Female 32 (62.7%)
Years of age	Range 36-70	Mean 52.8
Co-morbid psychiatric symptoms*	Yes 29 (56.9%)	No 22 (43.1%)
Medically ill**	Yes 42 (82.3%)	No 9 (17.6%)

* The most common symptoms noted were depression and substance abuse. Other conditions reported were schizophrenia and bipolar illness.

** The most commonly reported diseases were diabetes, high blood pressure, high cholesterol, asthma and other respiratory illnesses, heart disease, stroke, and cancer. Many patients present with multiple medical illnesses.

Description of Program and Treatment Modalities

The clinic is staffed by a professional team consisting of a dentist, a psychologist, and an internist. These professionals work with trainees in their respec-

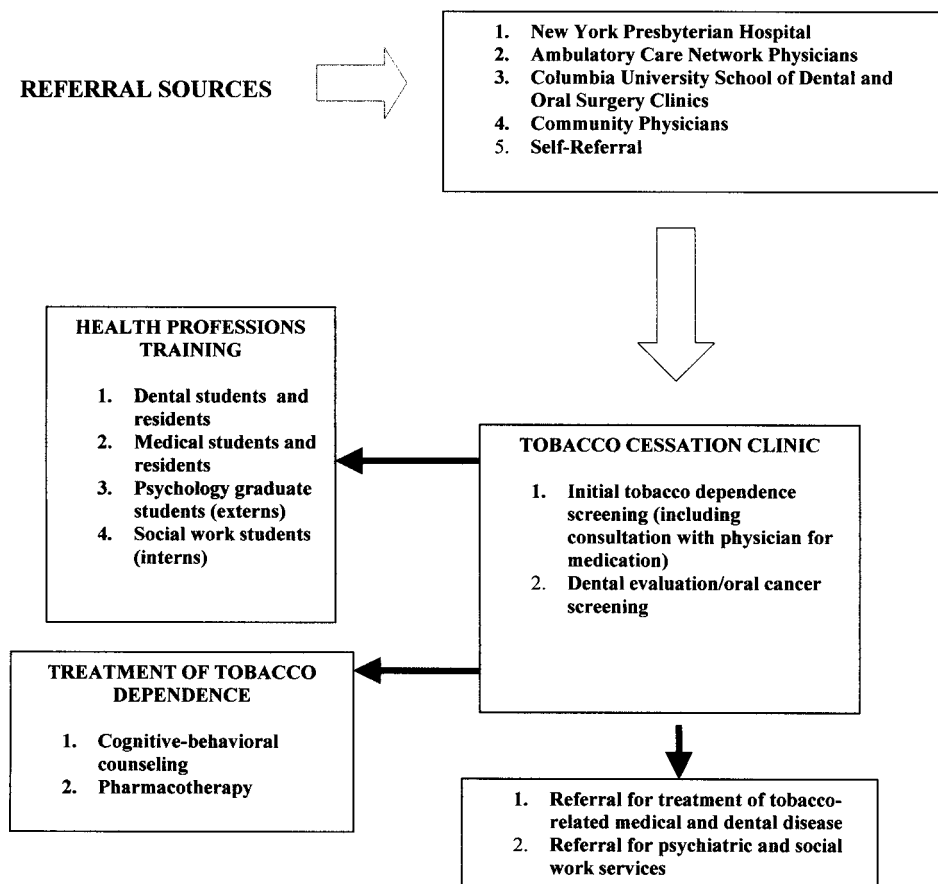


Figure 1. Clinical overview

tive specialties who provide clinical service under their supervision and assist with ongoing research. The role of the dentist within the tobacco clinic is 1) to examine the patient for oral cancer and conduct a dental and periodontal examination, 2) to refer the patient for further evaluation of suspicious lesions and possible biopsy, 3) to refer the patient to his or her existing dentist or the dental school clinic for treatment of tobacco-related periodontal disease, 4) to educate the patient on oral and systemic effects of tobacco use and show the patient tobacco-related changes in his or her oral cavity, and 5) to evaluate and treat tobacco dependence with the tobacco clinic team.

Where possible, patients are assigned to the appropriate member of the team based on an initial assessment and medical history questionnaire. For example, patients with psychiatric comorbidity are referred to the psychologist. If they have medical complications, management of their problem is coordinated and reviewed by the internist. The gerontologist addresses special concerns of older patients.

At the end of the initial assessment visit, each patient is offered an individual treatment plan, which includes both behavioral and pharmacological recommendations. Follow-up visits are scheduled to monitor medications, to further prepare for a quit date if it is postponed, and to provide structured behavioral and supportive counseling to prevent relapse. Patients are seen weekly during active cessation attempts.

Pharmacological Treatment Modalities. Several excellent pharmacological treatment modalities are readily available.¹⁹ They fall into two general categories: nicotine replacement therapies (NRT, which include gum, patch, nasal spray, and oral vapor) and the nonnicotine medication bupropion SR. When possible, bupropion SR is prescribed at an initial dose of 150mg once a day for three days, then 150mg twice a day. An additional benefit of bupropion SR is its antidepressant effect, although its efficacy has been shown for nondepressed smokers as well. Bupropion SR is potentially beneficial to patients who present with a diagnosis of depression since our experience is that cessation attempts are not successful in the presence of ongoing depression. NRT is recommended alone or in conjunction with bupropion SR. Patients remain on medications for as long as necessary, and decisions to end or decrease doses are made with each patient according to successful cessation and confidence in a smoke-free lifestyle.

Cognitive-Behavioral Smoking Cessation Counseling. The heart of smoking cessation counseling is to identify triggers to smoke and then to offer alternative coping strategies. Figure 2 outlines three common examples and illustrates how counseling involves thinking about triggers to smoke in new ways that contribute to the goal of living tobacco-free. It also involves developing and implementing new coping behaviors when at risk for smoking.²⁰

Figure 2. Three common triggers or “risks” to smoke, with alternative coping strategies*

Trigger: When you are with people who smoke.

Coping strategies

1. Speak with smokers before you see them, explain you are quitting, and ask them not to smoke around you.
2. Get comfortable being more assertive with smokers: Explain that it's not personal or permanent, but right now it's a good idea to be in a smoke-free environment.
3. If you must be around smokers, make sure to wear the patch or use the gum before spending time with them. Have a good supply of nicotine replacement with you.
4. Avoid alcohol.
5. Limit time with smokers when you are in a bad mood.
6. Avoid smokers if you can't cope.

Trigger: Alcohol

Coping strategies

1. Give up alcohol for the first several weeks of not smoking.
2. Limit yourself to one or two drinks each day until you are well established in not smoking.
3. Avoid being with smokers when using alcohol.
4. If you start craving a cigarette, try deep breathing to relax.

Trigger: When stressed/anxious/worried.

Coping strategies

1. Do breathing/relaxation exercises.
2. Remember that “this too shall pass.”
3. Seek out people who can help pull you out of yourself, who can offer real help, or just get you on another track.
4. Drink water.
5. Listen to music.
6. Remember it's okay to be upset, it's a part of life, and you don't need to “fix” it or take a drug like tobacco to calm down.

*Other common triggers listed in the public health service guidelines are “weight gain,” “depression,” “withdrawal symptoms,” and “lack of support for cessation” attempts.

The other crucial aspects of smoking cessation counseling are 1) positive clinical support and encouragement and 2) identifying barriers to the implementation of the treatment plan, such as poor medication compliance, “overconfidence,” or “flagging motivation.” There may also be occasions when the smoker is unable to cope with real-life problems and requires problem-solving help to avoid reverting to cigarette use.

Treatment Outcomes

For the fifty-one patients whose characteristics are described in Table 1, end of treatment success rate (complete cessation) at the clinic was 39 percent overall and 58 percent for patients who come for more than one visit. This sample was evaluated over a six-month period before recent changes in the New York State Medicaid policy. These changes provide reimbursement for prescription smoking cessation products. The clinic is currently evaluating the impact of these new Medicaid guidelines on compliance and treatment outcomes.

Thirty-three out of fifty-one patients presented in Table 1 were reached for a standardized telephone survey to follow up on their clinic treatment. Patients were contacted a minimum of three months and a maximum of twelve months after their clinic treatment ended. Follow-up phone calls not answered were repeated at least five times at different days of the week (except Sunday) and different times of the day. On follow-up, some patients had phones that were no longer in service, had provided incorrect phone numbers to the clinic, or had no phones listed. This is not unusual within an inner-city population, some of whom are recent immigrants who do not reside in the community for long periods of time or reside in both New York City and their native country, making contact for follow-up difficult. Of those patients contacted for follow-up by telephone interview, there was a 24 percent success rate. Patients who had relapsed were invited to return to the clinic if they were interested, in accordance with the U.S. Public Health Service guidelines, which recommend recognizing tobacco dependence as a chronic disease. The clinic is currently evaluating the impact of this follow-up intervention on future treatment outcomes.

Training and Education of Dental and Other Health Professionals

Dental and medical students and residents are encouraged to spend a half-day observing interviews and receiving brief didactic instruction. Psychology graduate students and social work students join the clinic staff for six to nine months of clinical training and supervision. At the recommendation of faculty, dental students are invited to join the clinic staff to provide tobacco cessation counseling under supervision, often in the context of assisting in faculty research. When dental students join the clinic staff, they begin by observing faculty conducting initial assessments, including the formulation of a treatment plan. With faculty encouragement, students then begin to conduct the initial interview themselves with faculty present. With growing competence, the students are assigned their own patients for tobacco cessation counseling. The assigned patient’s status and progress are presented by each student to faculty as a required part of every counseling session. The experiential component of learning in the clinic gives each student the practical know-how and confidence to apply smoking cessation techniques in the primary care setting.

Didactic Training in the Classroom. The faculty of the clinic have developed a three-hour didactic tobacco cessation course for third-year dental students. The course was originally based on “How to help your patients stop using tobacco: A National Cancer Institute Manual for the oral health team.”²¹ The course provided by the Columbia University Tobacco Cessation Clinic teaches students how to include prevention and cessation services in their practice of dentistry. Each dental student must formulate a tobacco cessation treatment plan on an existing patient. Topics covered include the role of the dentist in tobacco cessation, models of assessment and treatment, and pharmacotherapy for tobacco cessation. Dental students are shown videotaped interviews with tobacco-addicted patients, which are then complemented by case presentations by the clinic staff. Dental students who identify themselves as tobacco users who are interested in treatment are referred to the clinic for tobacco cessation counseling.

Didactic Training in the Clinic. The clinic’s internist provides individual, small-group, and large-

group training in the use of pharmacotherapies for smoking cessation. Visiting health providers are given individual or small-group instruction directly within the Tobacco Cessation Clinic, so that instruction is immediately reinforced by observation of patient evaluation and treatment sessions. Instruction and training takes approximately forty-five minutes during which time participants gain hands-on familiarity with all NRT products and bupropion SR formulations.

Instruction also covers the availability of various nicotine patch and bupropion SR preparations. The product offerings resulting from generic patch preparations are particularly confusing to students: customers of one large drugstore chain may find a single generic brand with 22 mg/d, 21 mg/d, 15 mg/d, 14 mg/d, 11 mg/d, and 7 mg/d sizes (representing the merger of three different manufacturing brand preparations). Students are able to handle and compare products, including generics, for maximum retention of knowledge and familiarity with these products and their various forms, as well as knowledge of proper dosing, administration, and prescribing.

Discussion

The point of entry of tobacco products into the body is through the oral cavity. The results of smoking are readily apparent: stained, yellowed teeth, an increase in periodontal disease, particularly gingivitis, and increased incidence of oral cancers. Providing tobacco cessation services in the dental setting builds on the tradition of prevention in dentistry. It expands on the behavioral component of the practice of dentistry, and it is in the tradition of trusting long-term relationships characteristic of the dental profession.

Brief versions of tobacco cessation strategies have already been shown to be effective. An excellent review of the National Cancer Institute's program of clinical trials to stop smoking delivered by dentists and physicians is available from Glynn, Manley, and Mecklenberg.²² In these trials, brief systematic interventions by trained clinicians produced up to 15 percent success rates at one year. This compares to an estimated 7 percent success rate at one year of all smokers who attempted to quit in 1991.²³ Due to their demonstrated effectiveness, dentist-delivered tobacco cessation interventions can play an important role in the future of dentistry. Helping tobacco users quit will increasingly be viewed as not only doable, but as a responsibility of dental practi-

tioners, not only in the clinic but in their own practice as well.

The patient population described in this article is primarily from a low socioeconomic and underserved population. Lack of reimbursement for smoking cessation medications has been a significant barrier to providing comprehensive services to this population in the past. However, recent changes in New York State Medicaid reimbursement now allow us to prescribe nicotine replacement therapy and bupropion SR (Zyban) to all our patients.

Overall, it is clear from our study that a multidisciplinary team approach to tobacco cessation can be established within a medical center community in the dental school setting. A comprehensive care clinic becomes a resource for training and education of dental students and other health care professionals in tobacco cessation. This clinic is effective in addressing the needs of complex patients presenting with an array of dental, medical, and psychiatric problems requiring coordination among health care professionals.

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