Implementing a Tobacco Assisted Referral Program in Dental Practices

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Abstract

Objectives: *The objectives of this study are to design and implement a system-level tobacco-control intervention in a large prepaid dental group practice and assess effects on staff performance measures and patient satisfaction.* ***Methods:*** *We matched 14 dental facilities on size, socioeconomic status, smoking rate, and periodontal status, and then randomly assigned them to intervention or usual-care control. We trained intervention staff in an "Assisted Referral" team approach for assessing tobacco use, providing tailored advice and brief counseling, and encouraging smokers to talk by telephone with a specially trained tobacco counselor. Patients could call from the office or ask that the counselor call them later. Telephone counselors helped patients explore motivations and barriers for quitting; review available cessation-support strategies, programs, and medications; and identify next steps.* ***Results:*** *During the 14-month study period, 66,516 members had annual- or new-patient examinations. Both intervention and control sites had high rates of tobacco assessment (97 percent) and advice (93 percent). Intervention patients were more likely than controls (69 percent versus 3 percent,* $P < 0.01$*) to receive additional chair-side tobacco counseling and assistance, and 11 percent agreed to receive additional telephone counseling. Intervention patients were more satisfied than controls with the dental team's tobacco-control efforts (*$P < 0.03$*). Referral rates varied substantially for different staff.* ***Conclusions:*** *The Assisted Referral approach was successfully integrated into routine dental care, was well received by patients, and resulted in increased patient satisfaction. Because free telephone-based tobacco counseling is now available nationwide, the approach may be a practical strategy for most dental-care settings.*

Key Words: tobacco cessation, dentists, dental hygienists, behavior intervention, prevention, quality improvement, translation research

Introduction

Tobacco use remains the number one preventable health threat in our nation. In addition to affecting general health, it significantly increases risk of periodontal disease and oral cancer (1-4). Most patients report that medical and dental staff should offer tobacco-cessation services and that they are more satisfied with their care when tobacco is addressed (5,6). More importantly, meta-analyses indicate that brief tobacco interventions by both dental- and medical-care providers effectively increase quit rates (1,5,7-9). Few dental professionals, however, systematically offer the full range of recommended tobacco-cessation assistance (10,11).

Disease prevention and patient education are central to the mission of dentistry (12). Tobacco-use status should be routinely evaluated during periodic oral exams, and cessation advice should be a routine part of prophylaxis treatment, which offers a "teachable moment" when many patients are more open to considering cessation (8,13). Recommended tobacco-control interventions include the "5As": Ask about tobacco use, Advise users to quit, Assess readiness to quit, Assist interested smokers in quitting, and Arrange for follow up (12).

Many dental professionals already provide advice to quit, which is relatively easy to do and takes little time (<60 seconds), but few regularly deliver the all-important "Assistance" and "Arrange" components of the 5A model. Meta-analyses (12) show that it is precisely these more intensive Assist and Arrange components that have the greatest impact on cessation rates (12,14-16). Many clinicians, however, do not have the time, training, knowledge, or skills to provide tobacco-cessation assistance, which includes helping patients identify their motivations and barriers for quitting, consider alternate cessation strategies, and learn about options for group, telephone, and pharmacological support. More powerful, innovative, and practical tobacco interventions are needed for dental offices to take advantage of the clinical encounter. Realistically, the dentists' and hygienists' role should focus on asking about tobacco use and providing brief advice, but assessment of interest in quitting, meaningful cessation assistance, and follow-up support should also somehow be provided.

A potentially more effective and sustainable "Assisted Referral" strategy for doing these would involve encouraging tobacco users to talk

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briefly by telephone with a professional tobacco (i.e., quitline) counselor who is well equipped to answer questions, suggest cessation strategies, and help interested patients take the next step. These calls would ideally take place at the end of the dental-care visit as an integral part of the clinical encounter. If patients prefer, then staff could also arrange to have counselors call them later at a more convenient time. Because most of the more challenging assistance components would be provided by the telephone counselor, the time commitment for dental staff would be minimal and fit within the visit flow.

A separate, and daunting, challenge is implementing a significant change in well-established practice patterns of a large number of clinical staff (17,18). Education and guidelines are generally insufficient to promote long-term change. Multifaceted organizational-level interventions that provide the necessary knowledge, skills, reminders, system support, performance feedback, and reinforcement over time are needed.

This paper describes a large prepaid dental-care system's initial experience implementing this "Assisted Referral" approach under real-world clinical conditions in a random half of 14 large dental offices. We describe the team approach in detail, the organization-level consensus-development process, and strategies used to implement these system-level practice changes. We also present population-level data on the effects of this large-scale quality-improvement program on staff tobacco-counseling practices and patient satisfaction.

Methods

Setting. The Kaiser Permanente Dental Care Program (KPDCP) offers prepaid dental care to about 180,000 members through 16 dental offices in northwest Oregon and southwest Washington. Permanente Dental Associates P.C. (PDA) is a for-profit professional corporation of about 120 dentists who provide services for members enrolled in the dental program. KPDCP also includes about 130 dental hygienists (DHs).

Design and Overview. This study was approved by the Kaiser Permanente Committee for the Protection of Human Subjects. In a group-level randomized controlled clinical trial, 14 large general-dentistry offices in operation at the time of study initiation were matched on: a) the number of annual- and new-patient examination visits in the previous year; b) predicted family income under US$30,000 based on geocoded data; and c) smoking rate based on electronic dental records of patients seen for dental care during the previous year. Matched pairs of facilities were then randomly assigned to intervention or control. Intervention facilities were trained to offer brief tobacco counseling and encourage patients to talk by telephone with a trained tobacco counselor at the end of the visit, or schedule a later callback at a more convenient time. Using an electronic dental record, we monitored tobacco-related service data over a 14-month observation period for each office pair after a 1-month clinic transition period. Shortly after the annual dental exam, patients listed as cigarette smokers in the electronic dental or medical record were called to complete a telephone survey. The primary outcome was the rate of delivery of tobacco-cessation assistance beyond simple cessation advice.

Tobacco Assisted Referral Intervention

Referral Procedure. The Assisted Referral procedure was a team approach in which dental staff, usually the hygienist, asked about tobacco use in the last 30 days, linked tobacco use to the patients' oral health status, and provided brief advice to quit. The dentist reinforced the importance of quitting in light of periodontal status and other risk factors, and also provided brief, clear, and respectful advice to quit. Staff then encouraged patients to talk briefly by telephone with a health plan tobacco counselor to learn about resources and options for quitting. An example would be:

> Many patients have found it really helpful to talk to a Health Consultant by phone for a few minutes at the end of the dental visit, even if they're not considering making any changes right now. There's no judging, no lectures, no pressure. They can answer your questions and describe resources available to you. You can use as much or as little of their services as you like. We can directly link you with one of these consultants. How would you feel about doing that at the end of your visit today?

Patients could either call from the dental office using a convenient speed dial button or complete a short form to request that the counselor call them back later. Dental staff coded tobacco status and the cessation services delivered on a standard visit form that was entered into the electronic dental record.

Telephone Counseling. The health plan provides telephonic health education and counseling for dental and medical patients through its centralized Health Education Services (HES) department. HES counselors initially provided 5-15 minutes of counseling using Motivational Enhancement and Brief Negotiation techniques (19), and assessed Stage of Change. They helped patients explore motivations and barriers for quitting, reviewed available group- and multi-session telephone-counseling programs, provided self-help materials, and arranged access to cessation medications as part of their covered benefit. While this service was provided by the health-care system, similar telephone-based tobacco-cessation support is available and free to dental practices nationwide through state- and national-level tobacco quitlines.

Mobilizing the Organization. Integrating the program required cooperation and support from top-level regional leaders, office leaders, clinicians, and staff. We worked with the health plan "community" using Bracht's Five Stage Community

Organization Model (20) as described below.

Organizational Analysis. The first step required an analysis of the health plan's needs, resources, social structure, and values. We met repeatedly with key health plan administrators to discuss how best to institutionalize the training and feedback components into daily operations, coordinate between departments, monitor progress, and provide feedback.

Design and Initiation. We established a core implementation group that included the project investigator and intervention director (Hollis and Little, respectively), study staff, health plan leaders, and the administrators and professional leaders of each of the seven intervention offices. During the planning period, we worked to refine the final protocol, materials, procedures, roles, time lines, and strategies to tailor the program to the needs of patients, staff, and the system. These included changes to the standard visit-encounter form and the electronic dental record to facilitate tracking and feedback to staff.

This planning process included a focus group with 10 dental-care providers, dentists, DHs, and administrative support staff that provided feedback to refine the intervention content, identify barriers and concerns, and promote fit with daily operations. Staff also shared their attitudes about, and experiences with, tobacco counseling, and their views about the feasibility of the Assisted Referral program in routine practice. We then worked with each of the seven intervention facilities in a series of meetings to tailor operational details to local needs.

We also conducted in-depth structured telephone interviews with 10 tobacco users, ages 19-65 years, who had recently visited a dental office to get feedback about the planned approach. Patients were asked about previous stop-smoking support from dental staff and about types of assistance they would like to receive. We then described the Assisted Referral approach. Most (8 of 10) said they would appreciate an Assisted Referral offer during their dental visit and would be willing to make the call. Patients also felt that dentists and hygienists should routinely discuss tobacco cessation and its relationship to their oral health.

Dental-Office Training

Implementation. The training sessions for the intervention offices were developed and led by an experienced team that included dental-health educators and trainers, tobacco counselors, a psychologist, facility leaders, and a high-level dentist/administrator. These 90-minute training sessions were based on previous studies of organizational-level practice change (5,8,13,16). The seven randomly assigned usual-care control offices received no training and agreed to delay implementation of the Assisted Referral program until the 2-year study period was complete. Usual care in this setting, however, already included tobacco assessment and brief advice for over 90% of patients. Staff also occasionally offered more extensive counseling, brochures, and other stop-smoking handouts. Posters advertising the availability of general health education counseling by telephone were prominently displayed in all facilities.

Training at the seven intervention offices occurred sequentially over a period of 7 months. We identified and contacted key managers and staff at each intervention office and planned an organizational meeting to review the Tobacco Assisted Referral concepts and training plan, and worked out individual office needs prior to implementation. We stocked the necessary handouts and referral forms, identified a semiprivate area for patients to make the call, arranged a system for supplying and mailing referral forms, and clarified how staff would document the services delivered and enter the information into the electronic dental record. Specific roles for office personnel included identifying patients who use tobacco, delivering advice and the Assisted Referral message, documenting services, entering data into the electronic dental record, and forwarding the callback referral requests to the HES department. The Assisted Referral process began on the day after training was delivered.

Staff Trainings. Our intervention team presented a 2-hour orientation and training session at each of the seven intervention facilities. All office staff attended. The Assisted Referral training focused on the delivery of brief tobacco-cessation assistance and counseling, followed by an explicit request to talk by telephone with an HES health consultant after the dental visit. Training included Assisted Referral demonstrations, staff-practiced role-plays, a model telephone interaction between a patient and an HES counselor, and review of office logistics for paper referrals and documentation.

A sample script card was given to the staff (Figure 1) to use as a reference for developing their own delivery style. Dental staff then broke into pairs to practice delivering the message. Afterward, trainers debriefed with the staff to identify concerns and barriers, and share strategies and experiences. Barriers and concerns included: a) too little time to do proper documenting, walk the patient to the telephone, or have the brief discussion; b) lack of confidence that the Assisted Referral will be helpful to patients; c) concern about possible negative patient reactions and the staff's lack of comfort in offering the Assisted Referral; and d) structural limitations such as lack of a private place for patients to make the call within the office. Experiences and suggestions for overcoming barriers were discussed and concerns were usually resolved within the session. Encouragement, support for the program, and positive experiences were also shared.

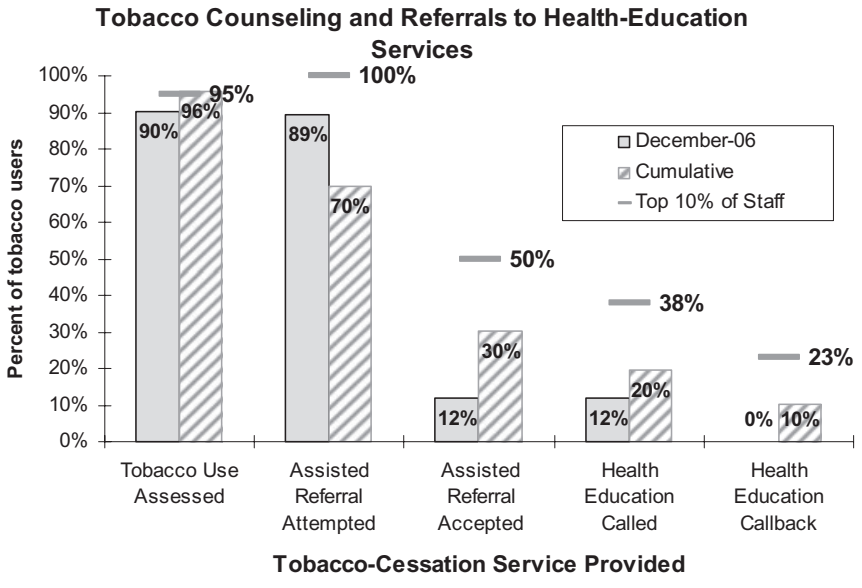
Post-training Support

Maintenance and Consolidation. Once the program was implemented, efforts continued to support ongoing problem-solving and institutionalization of the new practices and procedures. Performance feedback for providers and offices during this phase was an important part of this multifaceted intervention.

Figure 1
Provider script reference card. HES, Health Education Service

1. **A**SK about tobacco use	▪ "Have you used any **tobacco** in the **last 30 days**?"
2. **A**DVISE to quit	▪ "I've noticed _____ (gum disease, pocket depth, dry mouth, bleeding tissue…) which I believe is **related to tobacco** use." ▪ "I'd **like to encourage** you to consider making a change in your tobacco use, **but that's got to be your choice.** I know it can be a real challenge."
3. **A**SSESS readiness to call HES	▪ "Many **patients have found it really helpful** to talk to a Health Consultant by phone for a few minutes at the end of the dental visit to see if there's anything that might be helpful to them - **even if they're not considering making any changes right now**." ▪ "We **can directly link you** with one of these consultants. How would you feel about doing that at the end of your visit today?"
Ready to call HES?	▪ If the patient is ready right then, refer to direct phone line in your clinic.
Ready to arrange callback?	▪ If the patient doesn't have time right then but is ready to talk to HES soon, send A/R to HES. (Please ask the patient to indicate the best days, times, and locations in which to make the call, to maximize HES' likelihood to reach them).
Not ready (to talk with HES)	▪ *If patient is not ready, offer HES phone number (optional: this can be in the form of the HES "bookmark") and let patient know HES are available if and when he/she chooses to call. Offer patient support and encouragement as feels appropriate.*

Figure 2
Example of an individual office feedback report



The intervention director worked closely with office staff in the initial weeks following training to review progress and resolve questions and concerns. Visit slips and the electronic database were reviewed to determine how well staff members were documenting services and outcomes. During the first 3 months of implementation, the DH, and dentist or dental assistant, with the highest success rate of referring patients, were awarded a US$20 gift certificate. Office managers asked these successful clinicians to share their styles and approaches to generate discussion about what worked well and how to overcome barriers.

Performance Monitoring and Feedback. Monthly performance feedback at the provider-, office-, and cross-office levels was provided to intervention sites. These reports were posted prominently and reviewed during staff meetings, and included data from the electronic dental record regarding rates of tobacco assessment, advice, counseling and referral offers, and referral acceptances. Checkboxes for each of these services were automatically printed on the patient visit slip, along with other procedures and treatments planned for delivery that day to make it easy for the staff. Front-desk staff entered visit slip information electronically.

All-intervention Office Feedback Report. This monthly report included cumulative data from all seven intervention offices. Bar graphs showed how each office was doing relative to the others in offering telephone referrals (i.e., asking them to make the call) and in completing referrals (i.e., having patients make the call from the office or complete a callback form).

Individual Office Feedback Report. This monthly report (Figure 2) showed the number of referrals the office made during the past month compared with their cumulative office average since the beginning of the project. An "Achievable Bench Mark" (21) showed what the top-performing 10 percent of dentists and hygienists from all the intervention offices were achieving for each measure.

Provider-level Feedback Report. This monthly report allowed managers and staff to compare their individual performances to others' performances within their office, as

is customary in this quality-conscious clinical culture.

Institutionalizing the Program. Efforts to institutionalize the training and feedback components into dental plan operations continue. We have refined procedures based on what we learned during implementation and follow up, disseminated the intervention model to the control offices, and provided brief refresher trainings for all intervention offices.

Post-Visit Telephone Survey. We conducted a telephone survey of all patients who had an annual dental exam and were listed as cigarettes smokers (or "not assessed") in either the dental or medical electronic records (n = 3,672). Survey items were pretested and included received tobacco services, tobacco attitudes and behaviors, satisfaction with care, and demographic variables. Because this was designed as a dentist–hygienist team approach, we excluded smokers at new-patient exams where patients were usually seen only by a dentist. We sent a letter to let patients know we would be calling. One week later, we called, received consent from patients, and surveyed them about their tobacco use, attitudes toward quitting (motivation, confidence, and intentions), tobacco-cessation support services provided at their visit, satisfaction with their dental care and tobacco-related care during the visit (5-point Likert scales), opinions about whether dental staff should routinely encourage cessation, level of satisfaction with staff and their clinical care, and demographic factors. Interviewers were blind to treatment assignment.

Results

Tobacco-Cessation Services. Adult members had 66,516 new-patient or annual-recall dental visits (32,802 intervention and 33,714 control) during the 14-month study period. Asking and advising patients about their tobacco use were already standard care within the practices prior to the study, and rates were high and equal (97 percent) for both intervention and control offices (Table 1). Reported tobacco use was 12 percent and 11 percent for intervention and control offices, respectively. Overall, 93 percent of tobacco users across offices were advised to quit.

Assisted Referral Offers and Acceptance Rates. The in-depth counseling and referral efforts that were the focus of this study were much more likely to be delivered in the intervention compared with the control facilities (69 percent versus 3 percent). Over the 14 months, 317 (11 percent) intervention patients accepted an assisted referral at the time of their visit, with a little over one-third (n = 120) making the call to the tobacco counselor from the dental office immediately after their exams and the rest (n = 197) completing a form requesting a callback during the next few days. Of the patients who accepted the referral, 31 percent were referred by a dentist and 69 percent were referred by a hygienist or the hygienist/dentist team. Because of the setup of our electronic documentation system, the referral code could only be assigned to one person, either the dentist or the DH. The practitioners agreed, prior to implementation, to have the code assigned to the provider that initiated the primary effort for the Assisted Referral. Even though the Assisted Referral attempts and referrals were a team approach, most often the referral was credited to the hygienist. Because of the amount of time DHs traditionally spend with their patients providing personalized oral health feedback and preventive education services, the AR approach fits well into their routine.

Electronic dental-record data from each of the seven intervention offices showed referral acceptance rates varied widely among DHs. Among 59 DHs who saw 20 or more tobacco users, 32 percent recorded no successful referrals, 47 percent successfully referred 1-9 percent of their patients, 14 percent successfully referred between 10 and 20 percent of their patients, and the top 7 percent successfully referred between 20 and 30 percent of their patients.

Post-Visit Satisfaction and Attitudes. We telephoned 3,672 patients who were identified as smokers or not assessed at an annual-recall visit. We were able to reach and confirm current smoking status for 3,140 (86 percent), of which 2,272 (72 percent) consented to baseline- and follow-up telephone surveys. Smokers at intervention and control offices were similar in sex (57.4 percent female), mean age (46 years), education (73.3 percent had some college), and marital status (62.8 percent were married/partnered). Intervention-office smokers were more likely than control-office smokers ($P < 0.05$) to be Hispanic (5.7 percent versus 3.4

Table 1
Tobacco Ask, Advice, and Counseling Rates in Intervention and Control Offices

	Intervention		Usual-care control		
	n	%	*n*	%	*P*†
Annual- and new-patient exam visits	32,802		33,714		
Asked if using tobacco	31,834	97	32,755	97	0.41
Tobacco users identified	3,930	12	3,661	11	0.23
Advised to quit	3,633	93	3,396	94	0.76
Provided counseling and/or referral	2,779	69	318	3	<0.01
Referral accepted by patient	317	11	000	N/A*	
Called tobacco counselor from dental office	120	4	000	N/A*	
Arranged for a later callback	197	7	000	N/A*	

* Control staff had a field to document counseling but no specific referral mechanism.
† Adjusted for the nesting of patients within the facility.
N/A, not applicable.

Table 2
Patient Satisfaction and Attitudes toward Tobacco-Control Efforts

Post-visit survey data	Intervention $n = 1,212$ (%)*	Control $n = 1,060$ (%)*	P†
Satisfied/Very satisfied with care			
Dentist	94	95	0.34
Hygienist	96	95	0.73
Satisfied or very satisfied with encouragement to quit	73	67	0.03
Should dental staff encourage quitting and offer assistance?			
Usually or always	70	69	0.28
Sometimes	24	25	
Never	5	5	

* *n*'s vary slightly because of missing data.
† Adjusted for sex, race, age, education, low income, depression, heavy versus light smoking, nicotine dependence, other smokers in the household, and the nesting of patients within the facility.

percent), White (86.4 percent versus 82.7 percent), smoke one or more packs per day (32.2 percent versus 27.6 percent), and to smoke within 30 minutes of waking (46.3 percent versus 41.9 percent).

Intervention and control patients reported being equally satisfied with the overall care their dentist and DHs had provided (Table 2). Intervention patients, however, were significantly more satisfied with the encouragement they received to quit tobacco (73 percent versus 67 percent; $P = 0.03$), relative to the controls. Most patients (70 percent) in both intervention and control facilities reported that dental staff should encourage quitting or offer assistance to smokers "always or usually." Only 5 percent reported that staff should not offer cessation advice and assistance.

Discussion

A broadscale effort to implement the Assisted Referral procedure for tobacco-cessation support into the routine practice of a large prepaid dental-group practice increased tobacco counseling, referral attempts, and referral acceptances. Smokers in intervention, compared with control, facilities were also more satisfied with the tobacco counseling they received, and equally satisfied with their overall dental-care experience. The vast majority of smokers in both control and intervention offices reported that dental staff should routinely encourage smoking cessation and offer assistance. These findings show that it is feasible to include tobacco-control activities as a part of routine dental care without adding time to the visit. Patients also expect and appreciate encouragement and assistance in quitting.

While many clinicians regularly ask about smoking and advise quitting, few in today's busy practice environments provide meaningful assistance and follow up beyond simple written materials (10,22-25). This is unfortunate because meta-analyses (12) show that the odds ratio (OR) for brief assistance (OR = 2.3) is far greater than for just simple advice (OR = 1.3) (1,7-9,12-14,16). While more is clearly better, the challenge is to find more practical and sustainable methods, such as the Assisted Referral approach, that will allow clinicians to link their patients to the full range of assistance and support many need to successfully quit.

Implementing an Assisted Referral program in this large dental plan proved to be practical and generally successful, but changing staff attitudes and comfort levels about tobacco counseling was challenging, and the rate of successful referrals was modest. Many clinicians were initially concerned that discussing tobacco might alienate patients, although this became less of a concern over time. Indeed, survey data showed that intervention patients were actually more satisfied than controls with their tobacco-related care, and equally satisfied with their overall dental-care experience. Also, about 95 percent of smokers agreed that dental staff should regularly encourage tobacco cessation as part of good dental care. Key aspects of this organizational-change effort included having practical and convenient referral procedures, ongoing performance feedback, and periodic refresher trainings to help dental providers become comfortable and effective in addressing tobacco as an important part of dental care.

The dental program has now institutionalized this approach as routine care for all facilities. We would offer several recommendations to others planning a similar large-scale quality-improvement initiative. First, establish a high-level administrative group and identify key staff at each office to be responsible for ongoing support and maintenance of the program. Second, provide initial training and orientation to new staff and periodic refresher trainings for all staff. Third, provide regular feedback reports with achievable benchmark targets to individual offices and staff members. Fourth, make it simple and convenient for staff to deliver and document brief tobacco counseling and referrals so they can fit into the flow of a visit without adding additional time demands for staff. Offering telephone assistance to smokers is a practical way to link patients to experienced tobacco counselors who can help patients access the full range of available cessation resources. Fifth, although not tested here, performance incentives may help increase the referral rate (26).

Strengths of this population-level quality-improvement study include its large size and its reliance on regular staff and routine training, monitoring, and support procedures

within a busy nonresearch clinical-practice setting. A limitation was our reliance on administrative data, although quality-control monitoring indicated that documentation and data-entry errors were infrequent. We also noted that while most staff offered the Assisted Referral to most patients, some were much more effective than others in getting patients to agree to the telephone-counseling call; overall, the percentage of patients who accepted a referral was modest. Informal discussions with the most successful staff suggested that they strongly believed the Assisted Referral program would be helpful to their patients, and they were enthusiastic, comfortable, and consistent in offering the service. Other staff will require additional training and experience to increase their comfort and effectiveness.

Dental practice represents a substantial, and largely missed, opportunity to address tobacco use because over half of smokers see dentists each year (10). Tobacco use remains a major threat to oral health, and it is the responsibility of all dental professionals to systematically and effectively support tobacco cessation as a standard part of good clinical practice. The Assisted Referral approach is a practical strategy for all practice settings in North America, Europe, and Australia, now that free telephone-based counseling is available through state- and national-level quitlines (27).

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