Hollywood Quits—Behind the Scenes of a Hollywood-based Smoking Cessation Program

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***Objectives*: To develop, implement, and assess the efficacy of a comprehensive, evidence-based smoking cessation program for entertainment industry workers and their families. *Methods*: Study participants were recruited from 5 outpatient medical clinics and a worksite setting. Tobacco use data were collected during the initial counseling visit and at 6-month follow-up. Univariate and multivariate regressions were used in analysis. *Results*: More than 50% of participants (n=470) self-reported 7-day abstinence at follow-up. The majority of participants used combination cessation medications, with more than 50% still using at least 1 medication at 6 months. *Conclusions*: This evidence-based smoking cessation program using behavioral counseling and combination pharmacotherapy was successful with entertainment industry workers.**

***Key words*: smoking cessation, tobacco use, combination pharmacotherapy, counseling, entertainment industry**

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An estimated 250,000 people work in the entertainment industry in metropolitan Los Angeles, Calif. Although smoking rates throughout California are among the lowest in the nation,[1] focus group and anecdotal data suggest that smoking rates among actors and production workers are well above the state average of 14.8%.[1] Smoking is perceived as a stress reducer, a convenient prop, a way to deal with boredom, and an appetite suppressant for the weight conscious.

In June 2001, the American Legacy Foundation (Legacy) and Entertainment Industry Foundation (EIF) entered into a collaborative alliance to address key issues in tobacco control. Through its work

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products, the entertainment industry can influence and affect the uptake of smoking among youth. The development of a comprehensive, evidence-based smoking cessation program for entertainment industry workers in metropolitan Los Angeles was undertaken as one of the projects of the Legacy/EIF partnership. The program was appropriately titled "Hollywood Quits" and aimed to build capacity and promote tobacco treatment services for this geographically coherent industry that has traditionally lacked coverage or access to convenient tobacco cessation treatment.

Providing tobacco treatment services to a whole industry is an ambitious undertaking, but past efforts by the auto and railroad industries have been very successful. For example, the Union Pacific Railroad's prevalence of smoking in its population fell from 40% in 1993 to 25% in 2001, due in part to the railroad's policy and programmatic efforts, as well as a general national trend in the reduction of smoking.[2] In addition to smoking policy changes, the railroad industry implemented behavioral interventions that included individual in-person and telephone counseling and studied the impact of bupropion in combination with counseling. As a result, bupropion is now covered by the major union health plans.

To maximize initial and long-term cessation, we designed an intensive evidence-based multicomponent pilot program that included group, individual, and telephone counseling and follow-up for 1 year. Combination pharmacotherapy was also offered for up to 1 year.[3-5]

This paper describes the design and implementation of a comprehensive tobacco treatment program in an outpatient 5-center medical clinic and a worksite setting. In addition, the paper assesses the efficacy of this pilot program among this diverse group.

METHODS

Participants and Settings

Participants were recruited from 2 diverse populations: (1) entertainment industry workers and their families whose health care was provided by the Motion Picture and Television Fund (MPTF) and (2) regular employees of Warner Bros Entertainment (WBE). The first setting, MPTF, is a health care provider that offers services to entertainment industry workers and their families whose primary insurance is the Motion Picture Industry Health Plan; Screen Actors Guild; Writers and Directors Guilds; or the International Alliance of Theatrical Stage Employees, Moving Picture Technicians, Artists and Allied Crafts. MPTF sees approximately 130,000 visits annually and has a strong preventive medicine orientation and an established wellness program.

The second setting was a worksite program at one of the major motion picture and television studios in the Los Angeles area, WBE, with approximately 5000 regular full-time employees. Senior management supported the project and provided space for individual and group counseling. They also modified their medication benefit plan to add coverage for bupropion, nicotine inhaler, and nicotine nasal spray for up to 1 year. Both MPTF and WBE had offered periodic group tobacco treatment services in the past, but medications were not generally covered by the health insurance plans and attendance rates were low.

Procedure

MPTF participants were recruited primarily through MPTF physician referrals using an innovative fax referral system. Working closely with the MPTF administration, physicians, nurses, and other allied health staff, a system was put in place to refer patients to Hollywood Quits with minimal barriers. The approximately 30 MPTF physicians and their nurses and administrators received 1 hour of training on the 5As, the referral process, nicotine addiction, and smoking cessation medications, just prior to program initiation. Documentation of asking and advising smokers to quit was also included in each physician's clinical audit.

At each patient contact, the physicians were encouraged to ask about tobacco use, advise users to quit, and then refer to Hollywood Quits by faxing a HIPAA compliant referral form, signed by the patient. Referrals from those who just wanted information, as well as those ready to quit, were encouraged. An outbound intake call was made to the patient within 3 days by the Hollywood Quits program coordinator. During the intake call, the treatment options and medication benefits were explained and motivation to quit was assessed. Patients ready to quit smoking within the next 30 days were

enrolled in the treatment option of their choice, and the initial counseling visit was scheduled. At that first visit, the research protocol was explained and informed consent was obtained. Patients were not required to participate in the research protocol in order to receive all of the services and benefits offered by the program. Referring physicians were sent patient progress reports after the intake call and at 1, 3, and 6 months after the initial visit. The reports included the treatment option chosen, smoking status, medication usage, and a brief progress note by the counselor. The current analysis includes 419 MPTF participants (Figure 1).

Recruitment for Hollywood Quits at WBE was initially done through a prominent posting on the home page of the company Intranet, a system that almost every employee accessed at least several times per day. The posting hyperlinked to additional program information and an E-mail link to provide contact information to Hollywood Quits. Respondents were contacted and invited to attend a "lunch and learn." Two orientation sessions were subsequently scheduled during which the program was again described and employees signed up for either group or individual counseling. The principal investigator and one of the counselors conducted the lunch-and-learn and orientation sessions whereas the contracted physician attended the orientation sessions. Informed consent was obtained at the first counseling session; however, the employees were not required to participate in the research protocol to receive all of the services and benefits offered by the program. A second wave of recruitment via a similar posting on the company Intranet began 4 months after the first, with an additional subsequent orientation session. The current analysis included 51 WBE participants (Figure 1). The pilot study was approved by the MPTF Institutional Review Board (IRB) and by the Essex IRB in Lebanon, NJ.

Inclusion/Exclusion Criteria

All tobacco users 18 years of age and older were eligible for the program, although only cigarette smokers, all of them daily users, were included in the efficacy analysis. Additionally, participants included in the efficacy analysis met the following criteria: (1) attended Visit 1 during the 2004 calendar year; (2) signed the informed consent; and (3) at Visit 1, agreed to attend Visit 2, thus excluding those who decided at Visit 1 that they were not ready to quit smoking. However, participants who agreed to attend Visit 2 but later cancelled or "no showed" were included in this intent-to-treat analysis.

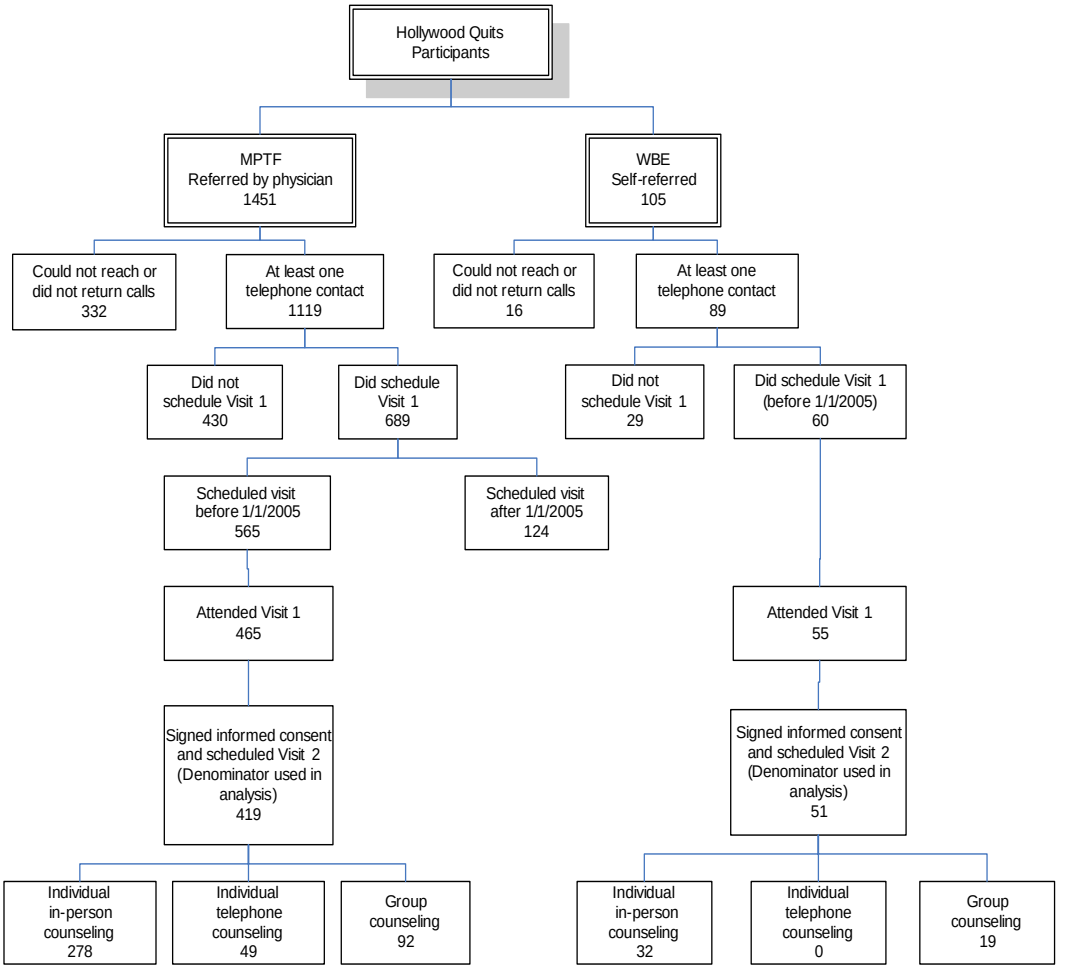
Program Development and Design

Focus groups. Three focus groups were conducted during program development with cigarette smokers in the entertainment industry at large and 2 with cigarette smokers specifically from WBE. Two of the industry-at-large groups were gender segregated whereas the third was integrated. Approximately 10 smokers were in each group. The groups were conducted in a standardized manner by the same experienced focus group leader. The contracted focus group provider recruited the participants from their own database and a posting on the WBE Intranet. Participants were paid $150 for their time. Only 3 focus group members, all from WBE, later enrolled in Hollywood Quits. As this was a pilot study, their data were included in the analysis.

The focus groups assessed attitudes about smoking in the industry, knowledge of available smoking treatment programs and medications, components that would constitute an ideal program, and perceived barriers to participation. Elements of a smoking treatment program that emerged as essential were (1) flexible hours to accommodate hectic work schedules; (2) choice of individual, group, or telephone counseling; and (3) counseling and smoking cessation medications provided at low or no cost. Based on the focus group findings and recommendations from *Treating Tobacco Use and Dependence*, the Clinical Practice Guideline created by the US Department of Health and Human Services and based on an extensive literature review and expert opinion the Clinical Practice Guideline,[6] we created a treatment program with the intent to maximize long-term quit rates and minimize any barriers to participation.

Counseling. The counseling protocol was the same for both MPTF and WBE. Group, individual in-person, and telephone counseling options were available. Strong empirical evidence supports the use of these behavioral treatment for-

Figure 1
Participation in the Hollywood Quits Program



mats in smoking cessation interventions.[6-9] The group program consisted of 9 sessions of 1.5-hours each over a 10-week period, offered in the evening. It was conducted on-site for WBE participants and at the 2 largest MPTF health centers. These centers were within driving distance from either work or home for most MPTF participants. Five to 10 minutes of telephone follow-up for relapse prevention and support was provided at months 3, 4, 5, and 9. Group meetings for support and data collection were held at months 6 and 12.

Individual in-person counseling was offered during the day and evening hours on-site at WBE, at the 2 largest MPTF health centers and at the Los Angeles Clinical Trials office, which was close to another, smaller MPTF health center. A 1-hour initial session was followed by 5 weekly sessions of 30 minutes each. After Week 6, 15-minute counseling and support sessions via telephone were provided every 2 weeks through month 3. Thereafter, the schedule was the same as detailed above for the group participants.

The visit schedule for telephone counseling was the same as for individual in-person counseling, with program materials delivered via E-mail or US Mail. The target quit day for all 3 treatment options was typically set for the day of the third weekly visit. The group intervention included a scheduled visit 2 days after the quit day.

The counselors had at least 3 years of smoking cessation counseling experience. Each received additional in-service training on nicotine addiction; pharmacotherapy; and the differing dynamics of group, individual and telephone counseling. We used a caseload approach with each counselor responsible for conducting all of the counseling and follow-up visits with each of his or her participants. The PI attended at least the 1st session of each smoking cessation group to describe the research component of the project and provide an introduction to nicotine addiction and pharmacotherapy.

Smoking cessation medications. A medication plan was developed by the counselor at the first counseling visit, taking the following factors into account: cigarettes per day, time to first cigarette, quitting history, prior medication usage, medical and psychiatric history, and patient preferences. Combination therapy was often recommended. Combinations typically consisted of one or more long-acting medications (eg, bupropion, nicotine patch) to reduce overall craving and withdrawal, coupled with a short-acting nicotine replacement therapy (SANRT), such as gum, lozenge, inhaler, or nasal spray, to prevent or mitigate breakthrough craving. Participants were instructed to use enough of the SANRT to feel comfortable not smoking. At the first counseling visit (except for telephone only), participants sampled 1 inhaler cartridge, 1 piece of 4 mg gum, and a 4 mg lozenge in an effort to encourage use and determine preference for these medications.

Medications that were part of the individualized plan were available for a $10 to $15 co-pay per medication per month for up to 1 year. Medication use was strongly encouraged for a minimum of 3 months, barring side effects or emergent contraindications. For MPTF participants, counselors faxed the referring physician the proposed medication plan/prescription form. If the proposal was acceptable after reviewing, the physician signed and faxed it to the appropriate MPTF pharmacy for filling. The medications were usually ready for the participant within 3 days of the first visit. For data collection purposes, all medications, for both MPTF and WBE participants, were filled at MPTF pharmacies. There was an MPTF pharmacy within 1 mile of the WBE studio.

As an additional mechanism for reducing barriers to participate at WBE, we contracted with a local internist with a subspecialty in addiction medicine to manage the smoking cessation medication component of the program. He performed brief physicals at the worksite; wrote prescriptions for bupropion, inhaler, and nasal spray; and followed up on side effects.

Measures

Data collected during the initial counseling visit included demographic information, tobacco use history, the Fagerström Test for Nicotine Dependence, methods and medications used in previous quit attempts, motivation to quit smoking, medical and psychiatric history, and nicotine replacement treatment preferences for the current quit attempt. Data collected at the 6-month telephone follow-up included self-reported smoking status and smoking cessation medication usage. Participants who self-reported not smoking for at least 7 days before the visit were asked to return for carbon monoxide (CO) verification (<9 ppm = not smoking). Because of the difficulty of obtaining 6-month CO verification from participants who lived out of the area or who were on location, the primary outcome measure was the self-reported 6-month 7-day point prevalence abstinence rates (no smoking, not even a puff, during the previous 7 days), whereas CO-verified quit rates were the secondary outcome measure. For similar reasons, self-reported quit rates were used in the analyses of predictors of quitting. Self-reported medication usage was cross-checked against MPTF pharmacy records.

Statistical Analyses

Data were analyzed using Stata Software (Version 9.1). Frequencies of demographic and smoking history variables are reported. To explore potential differences in abstinence rates by sociodemographic characteristics, smoking history, counseling, and medication

use, we conducted bivariate analyses. For these analyses, we created dichotomous indicators for gender, households with at least one additional smoker, longest previous time quit, medication use in treatment, and bupropion use in treatment. Categorical variables were developed for age, race/ethnicity, education, number of cigarettes smoked per day, age of smoking initiation, time to first cigarette of the day, and counseling type. Univariate logistical regressions were used to test for statistically significant correlations for the primary outcome: abstinence from smoking. Chi-square analyses were used to determine differences between categorical variables; Student's *t* tests were used to determine differences between continuous variables. A multivariate logistic regression model was used to more closely examine the association between abstinence from smoking and various predictor variables, including demographic, smoking history, and medication usage.

RESULTS

Participant Characteristics

Between December 1, 2003, and January 1, 2005, 1451 MPTF participants were referred to the Hollywood Quits program; more than 90% were referred by their physician. A total of 105 WBE participants self-referred to the program (Figure 1). At least 1 telephone contact was made with 1119 of the MPTF participants and 89 of the WBE participants. Five hundred sixty-five MPTF and 60 WBE participants scheduled a Visit 1 prior to January 1, 2005, and 465 and 55 attended Visit 1, respectively. A total of 470 individuals (419 MPTF and 51 WBE) signed the informed consent form and scheduled Visit 2. This latter cohort represents the denominator used in the analysis. Of these, all of the WBE participants were entertainment industry workers, whereas 89% (n=373) of the MPTF participants were industry workers and 11% (n=46) were family members covered by an industry worker's insurance. The family members were included in the analysis because an additional aim of the project was to encourage the insurers in the entertainment industry to include smoking cessation counseling and medications as a covered benefit. Of the MPTF participants who took part in the pilot study, 278 (66%) received individual in-person counseling, 49 (12%) received telephone counseling, and 92 (23%) received group counseling. Thirty-two (63%) of the WBE participants received individual in-person counseling, and 19 (37%) received group counseling. Although telephone counseling was offered to WBE employees, none chose that option as they were able to fit the on-site group or individual counseling into their schedule.

Demographic and smoking history characteristics of the participants served by the Hollywood Quits program are presented in Table 1. Participants were predominantly male (60%), white (81%), and well educated. The mean age was 45 years. Thirty-five percent lived with at least 1 additional smoker. Mean cigarettes smoked per day was almost 20, and 73% smoked their first cigarette of the day within 30 minutes of awakening. Participants had tried to quit an average of 3.3 times with only 37% having quit for at least 1 year. Participants reported a high motivation to quit, with a mean of 8.7 on a 10-point scale.

Tobacco Abstinence Rates

The 6-month self-reported 7-day point prevalence abstinence rate for Hollywood Quits participants was 52%, with a CO-confirmed abstinence rate of 39% (Table 2). The discrepancy between the 2 rates was primarily due to logistical issues in obtaining CO samples from participants who lived or were working out of the area, or were working 18-hour days, rather than participants self-reporting nonsmoking (N=1) who registered a CO reading of >8 ppm. Abstinence rates varied by the type of counseling received and the program setting. Participants who attended group counseling sessions had the highest self-reported abstinence rates (67%) (70% MPTF, 53% WBE). Abstinence rates were 48% for those who attended individual in-person counseling (49% MPTF, 41% WBE) and 49% for MPTF participants who chose the individual telephone counseling option.

Medication Usage

Ninety-five percent (445/470) of Hollywood Quits participants used at least 1 smoking cessation medication as part of their treatment plan. The nicotine patch was the most common medication, used by 68% of the participants, followed by bupropion (60%), inhaler (57%), lozenge

Table 1
Hollywood Quits Participant Characteristics
Demographics and Smoking History

	n	%
Overall	470	100.0%
Gender		
Female	190	40.4%
Male	280	59.6%
Age (years)		
18–29	19	4.2%
30–39	114	25.0%
40–49	162	35.5%
50–59	103	22.6%
60 or older	58	12.7%
Race/Ethnicity		
White	361	81.1%
African American	26	5.8%
Hispanic	15	3.4%
Other	43	9.7%
Education		
None/less than high school	7	1.5%
High school/GED	88	19.0%
Some college/associate's degree/technical school	218	47.1%
College/graduate school	150	32.4%
Households with at least 1 additional smoker		
Yes	157	35.0%
No	292	65.0%
Households with children and/or grandchildren present		
Yes	104	25.7%
No	300	74.3%
Time to first cigarette of the day (minutes)		
≤5 min.	147	32.2%
6-30 min.	188	41.2%
> 30 min.	121	26.5%
Longest previous time quit (years)		
< 1 year	297	63.2%
1 year or more	173	36.8%
	Mean	**Standard Deviation**
Cigarettes smoked per day	19.56	10.18
Number of serious quit attempts	3.35	5.23
Age of smoking initiation (years)	17.91	4.52
Motivation to quit score[a]	8.66	1.28

Note.
a Motivation to quit was calculated on a scale of 1 to 10, with 1 being not motivated to quit and 10 being highly motivated to quit.

(23%), gum (17%), and nasal spray (4%). The vast majority of participants used combination medication treatment, with 14% using 1 medication, 37% using 2 medications, 36% using 3 medications, and 9% using 4 or more medications. Of those using 1 medication, 41% used bupropion, 31% used the inhaler, and 17% used the patch. Of those using 2 medications, 33% used the patch and

Table 2
Point-prevalence Abstinence Rates 6 Months Following Program Participation by Type of Counseling Received

	Total		Motion Picture & Television Fund		Warner Bros Entertainment	
	N	%	N	%	N	%
Overall	470		419		51	
Self-report	246	52.3%	223	53.2%	23	45.1%
CO confirmed[a]	184	39.1%	162	38.7%	22	43.1%
Individual in-person counseling	310		278		32	
Self-report	148	47.7%	135	48.6%	13	40.6%
CO confirmed[a]	114	36.8%	102	36.7%	12	37.5%
Group counseling	111		92		19	
Self-report	74	66.7%	64	69.6%	10	52.6%
CO confirmed[a]	62	55.9%	52	56.5%	10	52.6%
Individual telephone counseling	49		49		0	
Self-report	24	49.0%	24	49.0%	0	
CO confirmed[a]	8	16.3%	8	16.3%	0	

Note.
CO = carbon monoxide
a The numerator for the CO-confirmed values is the number of participants who provided an expired CO sample and were confirmed abstinent, and the denominator is the total number of participants who attended counseling.

inhaler, 19% used the patch and bupropion, and 17% used bupropion and the inhaler. Of those using 3 medications, 49% used the patch, bupropion, and inhaler, whereas 19% used the patch, bupropion, and lozenge. Of those using 4 medications, 49% used the patch, bupropion, inhaler, and lozenge. There were no significant gender differences in the type or number of medications used, nor differences in medication usage between the MPTF and WBE participants.

Figure 2 demonstrates the effect bupropion use had on abstinence rates at the 6-month follow-up. Participants who used bupropion as part of their treatment program, whether alone or in combination, had higher abstinence rates (58%) than those who did not (44%) ($P<.01$). A similar pattern was not seen for patch users (53% vs 50%) or for any of the other medications. Also, in general, higher number of medications used was associated with higher abstinence rates.

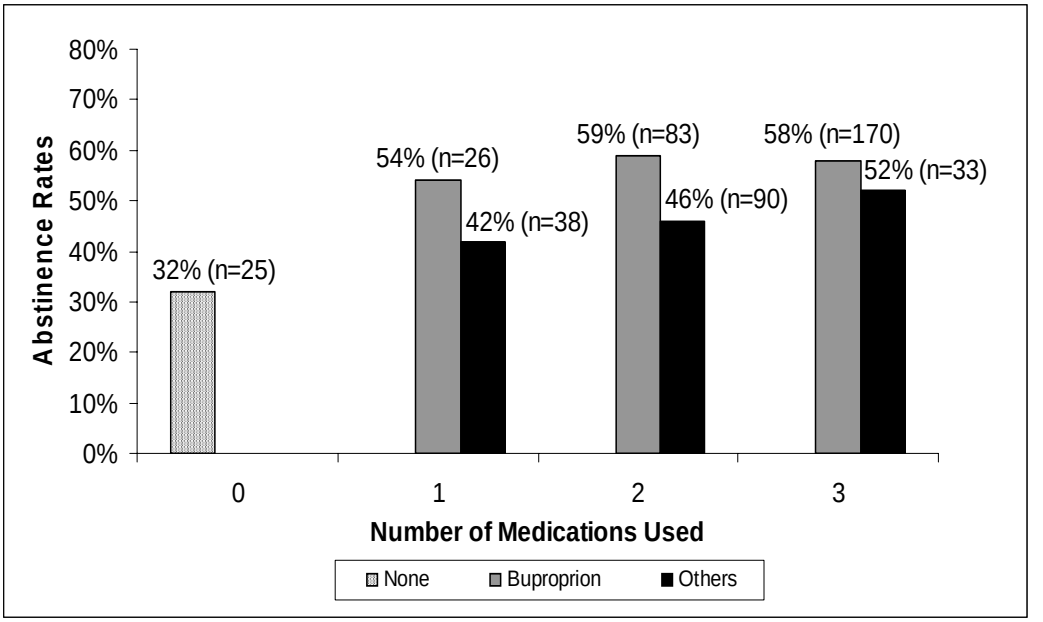
Table 3 describes the type and number of medications still being used at the 6-month follow-up by the 246 participants who self-reported abstinence at that visit. Fifty-six percent reported using medication during the previous 7 days, with 28% still using 2 or more medications. The most commonly used medications were bupropion (25%), patch (24%), and inhaler (24%).

Abstinent participants who had smoked their first cigarette of the day within 30 minutes of awakening were more likely to still be using medication at 6 months. Of those who smoked within 5 minutes of waking, 67% were still using medication, compared with 58% who smoked between 6 and 30 minutes after waking and 44% of those who waited more than 30 minutes. There was a significant difference between those who smoked less than 5 minutes and those who smoked more than 30 minutes after waking up ($\chi^2 = 7.7$, $P<.01$).

Bivariate Predictors of Abstinence

Bivariate analyses of self-reported abstinence at 6 months by selected characteristics are reported in Table 4. Abstinence rates were higher with increasing

Figure 2
Abstinence Rate by Number of Medications Used



age (P<.05), longer time to first cigarette of the day (P<.05), and longer length of previous time quit (P<.01). Abstinence rates were also higher among participants who used medication as part of their treatment (P<.05), particularly among those who used bupropion (P<.01). There were no significant differences in abstinence rates at 6 months by gender, race/ethnicity, education, households with at least 1 additional smoker, households with children and/or grandchildren present, number of cigarettes smoked per day, or age of initiation.

Multivariate Predictors of Abstinence

Logistic regression was used to examine the factors that were predictive of increased abstinence at 6 months. The following factors were found to be significant predictors of abstinence: age (OR, 1.02; 95% confidence interval [CI], 1.00 to 1.04; P<.05), time to first cigarette of the day greater than 30 minutes (versus <5 minutes; OR, 1.72; 95% CI, 1.01 to 2.92; P<.05), length of previous time quit equal to 1 year or more (OR, 1.90; 95% CI, 1.25

Table 3
Medication Use at 6-month Follow-up Among Successful Quitters

	Successful Quitters (n = 246)	
	n	%
Types of medications		
Patch	60	24.4%
Gum	17	6.9%
Lozenge	28	11.4%
Inhaler	59	24.0%
Nasal spray	5	2.0%
Bupropion	61	24.8%
Number of medications		
0	108	43.9%
1	68	27.6%
2	50	20.3%
3	18	7.3%
4	2	0.8%

Table 4
Abstinence Rates at 6 Months by Selected Characteristics

	n	Quitters Successful	%	P-value[a]
Gender				
Female	190	97	51.1%	NS
Male	280	149	53.2%	
Age (years)				
18–29	19	8	42.1%	0.037
30–39	114	53	46.5%	
40–49	162	84	51.9%	
50–59	103	61	59.2%	
60 or older	58	35	60.3%	
Race/Ethnicity				
White	361	195	54.0%	NS
African American	26	16	61.5%	
Hispanic	15	7	46.7%	
Other	43	16	37.2%	
Education				
None/less than high school	7	2	28.6%	NS
High school/GED	88	51	58.0%	
Some college/associate's degree/technical school	218	107	49.1%	
College/graduate school	150	82	54.7%	
Households with at least 1 additional smoker (%)				
Yes	157	79	50.3%	NS
No	292	156	53.4%	
Number of cigarettes smoked per day				
0–14	127	69	54.3%	NS
15–24	212	114	53.8%	
25 or more	120	59	49.2%	
Age of smoking initiation (years)				
<16	146	67	45.9%	NS
16–19	198	112	56.6%	
>19	117	63	53.8%	
Time to first cigarette of the day (minutes)				
≤5 min.	147	67	45.6%	0.032
6–30 min.	188	100	53.2%	
> 30 min.	121	71	58.7%	
Longest previous time quit (years)				
< 1 year	297	139	46.8%	0.002
1 year or more	173	107	61.8%	
Used any medication as treatment				
Yes	445	238	53.5%	0.036
No	25	8	32.0%	
Used bupropion as part of treatment				
Yes	284	164	57.7%	0.004
No	186	82	44.1%	

Note.
a P-values derived from chi square test for categorical variables.

to 2.88; P<.01), and use of bupropion in cessation treatment (OR, 1.94; 95% CI, 1.30 to 2.90; P≤.001). Gender, race, education, age of initiation, and use of various types of medications in cessation treatment (patch, gum, lozenge, inhaler, and nasal

spray) were included in the model but were not significant predictors of abstinence.

DISCUSSION

The purpose of this pilot study was to design, implement, and evaluate a state-of-the-art treatment program for cigarette smokers who worked in the entertainment industry in Los Angeles, Calif. Two very different pilot sites were chosen: a worksite at a major motion picture and television studio (WBE) and a health care provider that provides services to entertainment industry workers and their families (MPTF). Recruitment at WBE occurred through postings on the company Intranet, whereas more than 90% of participants recruited from MPTF were referred by a physician at a clinic visit through a fax-referral system. Abstinence rates at 6 months were high, with more than 50% of participants self-reporting 7-day abstinence. The majority of participants used combination smoking cessation medications, with more than 50% still using at least 1 medication at 6 months.

The rates of referral and enrollment from MPTF were particularly encouraging. Although we did not specifically survey participants or their physicians as to why they chose to participate in this program, recruitment protocol use and anecdotal evidence lead us to believe that the following components contributed to increased participation:

·Physicians' asking about smoking status, offering advice to quit, assisting with treatment referral, and exhibiting enthusiasm for the program.

·Faxed referral and initial outbound call from Hollywood Quits. If, instead, the physician had given the patient a brochure or card and then asked the patient to call Hollywood Quits, response rates may have been lower.

·Counseling options that fit the smoker's preference for type and schedule. All 3 options—group, individual in-person, and telephone counseling—were used.

·The intensity and long-term follow-up offered by the counselors. Participants felt that they would be continually supported by the program and not abandoned shortly after their quit day.

·Low cost and extended use of medications, including combination therapy. The perceived high cost of smoking cessation medications was consistently reported as a barrier to use, especially extended use, during the focus groups. Few participants had used combination medication in the past, and using this strategy encouraged the belief that this attempt may be easier and more successful.

Support from physicians, pharmacists, and administrators was also felt to be critical to the success of the program at MPTF. Administration provided space at the 2 largest health centers for the counselors and strongly encouraged the physicians to address tobacco. Having Hollywood Quits provide the counseling and develop the medication plan allowed the busy physicians to focus on using the teachable moment to identify and advise tobacco users to quit and then to refer to the program. Fax referral systems have been used with significant success to link health care systems to cessation services and resources in Massachusetts, Wisconsin, and Oregon.[10-12] In addition, several other states and provinces, including New York, Ontario, and Newfoundland and Labrador, have implemented fax referral systems to promote services to both providers and patients, to increase participation in cessation services, and/or to increase call volume to quit lines.[10]

Enrollment at WBE was also much higher than in any of their previous on-site smoking cessation programs, most likely due to administration buy-in, extensive promotion, group and individual counseling on site, and low-cost medications and ease of access to an Intranet recruitment strategy. Smoking prevalence at WBE was estimated to be approximately 15% (n=750) among the 5000 regular employees; therefore we were able to attract 7% to attend Visit 1 during recruitment for the pilot study. These rates are comparable to similar programs. More research is needed to identify creative ways to recruit smokers and provide incentives for worksite programs, such as implementation in conjunction with a change in workplace smoking policy.[2]

The overall 6-month self-reported (52%) and CO-confirmed (39%) 7-day point prevalence abstinence rates were high and compare favorably to recent reports from other multisession counseling programs that also used combination pharmacotherapy. For example, in a recent study by Steinberg et al,[4] 36% of the patients at a

tobacco dependence clinic who received combination pharmacotherapy plus individual and/or group counseling self-reported that they had not smoked during the previous 7 days at 6-month follow-up. Another study by Bars et al and funded by the American Legacy Foundation[5] reported 7-day point prevalence abstinence rates of 45% at 6 months among rescue workers from the Fire Department of the City of New York who participated in a cessation program using individualized combination pharmacotherapy. The CO-confirmed rate (39%) represents a conservative estimate as a portion of the participants were not able to come into the clinic due to geographic or work/time constraints. For example, only 8 of the 24 self-reported abstinent participants who chose the telephone-only counseling option came into the clinic for the CO monitoring visit. These participants, in particular, lived and worked outside the area. Considering that no participant fee was paid to complete the CO monitoring visit, the 80% completion rate for individual in-person and group participants (and even the 33% completion rate for telephone-only participants) was considered a success.

Important factors in achieving high abstinence rates included intensive counseling along with extensive and extended use of combinations of smoking cessation medications. The use of medications to reduce craving, withdrawal, and relapse was strongly encouraged by the physicians and counselors at every contact. We believe that sampling the inhaler, gum, and lozenge for 5 to 10 minutes each at the first in-person counseling session was in large part responsible for the nearly 93% of all participants using at least 1 SANRT in their quit attempt. Anecdotally, most participants reported noticeable craving relief during the testing, while also gaining valuable hands-on experience with proper usage techniques. Several studies have investigated NRT preference,[13-15] but randomized clinical trials are needed to determine whether hands-on sampling leads to greater use and increased quit rates.

As in the Steinberg et al cohort study,[4] we found that participants who used more medications generally had higher quit rates, and 56% of those who were quit at 6 months were still using at least 1 medication. Participants' long-term use of medications may in part be due to their low costs, as well as the high level of encouragement they received from Hollywood Quits staff to continue using the medications until they were truly comfortable not smoking. In the Lung Health Study, at 1 year, 33.6% of sustained nonsmokers were still using nicotine gum that was provided free of charge.[16] As expected, those who were more nicotine dependent as measured by time to first cigarette were also more likely to continue using medication than were those who were less dependent.

The multivariate logistic regression finding that participants who were older, had a previous quit attempt that lasted more than 1 year, or were less nicotine dependent were more likely to be quit at 6 months was in line with other studies.[17] The intensive intervention did not completely eliminate the usual inverse relationship observed between nicotine dependence and long-term cessation; however, the 46% self-reported abstinence rate at 6 months for those who smoked within the first 5 minutes was very high.

An unexpected finding from this pilot study was that participants who used bupropion, whether alone or in combination with other medications, were significantly more likely to be abstinent at 6 months than were those who did not. Meta-analyses have shown the odds ratios of quitting to be similar for bupropion and nicotine replacement therapy.[3] However, 1 large randomized controlled trial (RCT) comparing 7 weeks of either bupropion use alone or in combination with the nicotine patch resulted in significantly higher abstinence rates at 1 year compared with the nicotine patch alone or placebo.[18] A second RCT comparing 3 months of nicotine patch use alone versus patch plus bupropion did not find a significant difference at 1 year.[19] Clearly, further research in clinical settings is warranted to investigate this relationship and provide additional information on how to optimize pharmacotherapy for the treatment of tobacco dependence.

Limitations and Strengths

This study was a cohort study, not a randomized clinical trial, thus limiting our ability to causally determine which components of the intervention—intensive counseling, specific medications, combination medication, or extended use

of medication—led to success. Although the smoking cessation interventions were similar, this pilot took place in 2 different settings with dissimilar recruitment strategies; however, the sample size from the WBE setting was too small to accurately assess how setting type or recruitment strategy may impact smoking cessation outcomes. Interpretation of these results and further generalizability of these findings across setting types and recruitment strategies should be done with caution. The pilot tested an ideal intervention program that maximized access to counseling services and provided up to 1 year of medications at very low cost to the participants. One or both of these characteristics may not be operable in most health systems today, and thus the generalizabilty of abstinence outcomes needs to consider these limitations.

A major strength of the Hollywood Quits program is that the abstinence rates should be generalizable to motivated smokers in the entertainment industry in the Los Angeles area because the sample was large, included studio workers and a wide range of guild and union members, and was open to all smokers 18 years of age and older regardless of medical or psychiatric comorbidity.

Summary

This pilot demonstrated that smokers in the entertainment industry and their families will participate, and succeed, in an evidence-based smoking cessation program when it is fully integrated into the health center or worksite. Factors integral to the success of Hollywood Quits included buy-in and support from the leadership of WBE and MPTF, flexible intensive counseling options, subsidized cost of the medications, strong referral mechanisms and proactive follow-up telephone counseling. Six-month quit rates of 50% can be achieved through extended use of both behavioral counseling and combination pharmacotherapy. Sustainability over time was a goal of this program from the beginning, and due to its demonstrated success, beginning in April 2007, 1 of the major insurers in the industry is fully covering the costs of the intensive behavioral counseling as well as 6 months of pharmacotherapy treatment with either bupropion or the recently FDA-approved varenicline (Chantix), with only a small co-pay, for its members who enroll in the program recently re-branded as "Picture Quitting". Health care systems must continue to evolve to improve the success rates of tobacco treatment programs by covering both counseling services and pharmacotherapy at levels that are effective.

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REFERENCES

1. Centers for Disease Control and Prevention. State-specific prevalence of cigarette smoking and quitting among adults—United States, 2004. *MMWR.* 2005;54(44):1124-1127.
2. Richling D. Purchaser, State and Managed Care Purchaser Perspectives. Smoking Cessation: Facing the Challenges of Tobacco Addiction (online). Report to the Interagency Committee on Smoking and Health (ICSH), Centers for Disease Control and Prevention, Office on Smoking and Health. August 14, 2001. Available at: http://www.cdc.gov/tobacco/icsh/summary081401_page.htm. Accessed May 10, 2006.
3. Silagy C, Lancaster T, Stead L, et al. Nicotine replacement therapy for smoking cessation. The Cochrane Database of Systematic Reviews 2004, Issue 3. Art. No.: CD000146. DOI: 10.1002/14651858.CD000146.pub2.
4. Steinberg MB, Foulds J, Richardson DL, et al. Pharmacotherapy and smoking cessation at a tobacco dependence clinic. *Prev Med.* 2006;42:114-119.
5. Bars MP, Banauch GI, Appel D, et al. Tobacco free with FDNY: The New York Fire Department World Trade Center tobacco cessation

study. *Chest.* 2006;129(4):979-987.
6. Fiore MC, Bailey WC, Cohen SJ, et al. Treating Tobacco Use and Dependence. Clinical Practice Guideline. Rockville, MD: Public Health Service June 2000.
7. Stead LF, Perera R, Lancaster T. Telephone counselling for smoking cessation. *Cochrane Database of Systematic Reviews* 2006, Issue 3. Art. No.: CD002850. DOI: 10.1002/14651858.CD002850.pub2.
8. Stead LF, Lancaster T. Group behaviour therapy programmes for smoking cessation. *Cochrane Database of Systematic Reviews* 2005, Issue 2. Art. No.: CD001007. DOI: 10.1002/14651858.CD001007.pub2.
9. Lancaster T, Stead LF. Individual behavioural counselling for smoking cessation. *Cochrane Database of Systematic Reviews* 2005, Issue 2. Art. No.: CD001292. DOI: 10.1002/14651858.CD001292.pub2.
10. North American Quitline Consortium. Quitline Operations: A Practical Guide to Promising Approaches. Phoenix, AZ: North American Quitline Consortium 2005.
11. Perry RJ, Keller PA, Fraser D, et al. Fax to quit: a model for delivery of tobacco cessation services to Wisconsin residents. *Wis Med J.* 2005;104(4):37-40, 44.
12. Bentz CJ, Bayley KB, Bonin KE, et al. The feasibility of connecting physician offices to a state-level tobacco quit line. *Am J Prev Med.* 2006;30(1):31-37.
13. Schneider NG, Olmstead RE, Nides M, et al. Comparative testing of 5 nicotine systems: initial use and preferences. *Am J Health Behav.* 2004;28:72-86
14. Schneider NG, Koury MA, Cortner C, et al. Preferences among four combination nicotine treatments. *Psychopharmacology* (Berl). 2006 Sep;187(4):476-85. Epub 2006 Aug 1.
15. Hajek P, West R, Foulds J, et al. Randomized comparative trial of nicotine polacrilex, a transdermal patch, nasal spray, and an inhaler. *Arch Intern Med.* 1999 Sep 27;159(17):2033-2038.
16. Bjornson-Benson W, Nides M, Dolce J, et al. Nicotine gum use in the first year of the Lung Health Study. *Addict Behav.* 1993;18:491-502.
17. Hyland A, Li Q, Bauer JE, et al. Predictors of cessation in a cohort of current and former smokers followed over 13 years. *Nicotine Tob Res.* 2004;6(Suppl 3):S363-S369.
18. Jorenby DE, Leischow SJ, Nides MA, et al. A controlled trial of sustained-release bupropion, a nicotine patch, or both for smoking cessation. *N Engl J Med.* 1999;340(9):685-691.
19. Simon JA, Duncan C, Carmody TP, et al. Bupropion for smoking cessation: a randomized trial. *Arch Intern Med.* 2004;164(16):1797-1803.