7. CIGARETTE USE COUNSELING

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We relied on Chapter 48 of the Guide to Clinical Preventive Services published by the U.S. Preventive Services Task Force (USPSTF, 1989) to construct quality indicators for the prevention of smoking and the screening and treatment of cigarette use. When this core reference cited studies to support individual indicators, we have referenced the original source. We also performed narrow MEDLINE literature searches for articles from 1990 to 1995 to update the literature support for the proposed indicators.

IMPORTANCE

About one-third of all Americans smoke tobacco. Even higher proportions of African Americans and low-income patients smoke. Although smoking in women decreased from 28 percent to 25 percent between 1974 and 1992, the rate of decline has been slower among women than men (American Cancer Society [ACS], 1995; United States Department of Health and Human Services [USDHHS], 1989). In 1993, there were approximately 22 million female smokers and 73 percent wanted to quit smoking, but only 2.5 percent of all smokers are able to successfully quit each year (Centers for Disease Control [CDC], 1993; CDC, 1994). Tobacco abuse has been strongly associated with carcinoma of the lung, trachea, bronchus, esophagus, kidney, bladder, pancreas and stomach. Smoking also plays a large role in causing coronary heart disease, cerebrovascular disease, and obstetrical complications. As a result, tobacco abuse is the most important modifiable cause of death in the United States. Smoking is related to about 400,000 deaths annually and the total direct and indirect costs may exceed $200 billion (USDHHS, 1989; Fiore et al., 1989; ACS, 1995). Patients who stop smoking return to baseline risk profiles for coronary artery disease within three to five years (USDHHS, 1989; Rich-Edwards et al., 1995).
EFFICACY AND/OR EFFECTIVENESS OF INTERVENTIONS

Screening and Initial Evaluation

Many specialty societies and governmental organizations recommend asking patients if they smoke, including the American College of Physicians (ACP), American College of Obstetricians and Gynecologists (ACOG), American Academy of Pediatrics (AAP), and the National Cancer Institute (NCI), though there is little agreement as to the optimal interval for screening (ACP, 1986; Health and Public Policy Committee, 1986; ACOG, 1986; Committee on Adolescence, 1987; Glynn and Marley, 1993; USPSTF, 1989). For our quality indicator, we propose that intake history and physicals include screening for tobacco abuse. If the patient has not had an intake history and physical, at least one provider over the course of the year should ask about smoking.

Treatment and Prevention

Once a patient has been identified as a smoker, providers have modest but definite impact in helping them quit (Russell et al., 1979; Ewart et al., 1983; Wilson et al., 1982; Wilson et al., 1988). A meta-analysis of 39 controlled trials found that counseling yielded an 8.4 percent (95 percent CI 5.6-11.2) reduction in the number of smokers at six months and a 5.8 percent (95 percent CI 3.2-8.4) reduction at one year (Kottke et al., 1988). While most of the individual trials did not demonstrate an effect, the 95 percent confidence limits after pooling the subjects exclude zero for both time points (Kottke et al., 1988).

A broad-based program to stop smoking appears to be most effective. The most successful trials were more likely to employ both group and individual counseling, teams of physicians and nonphysicians, multiple reinforcement sessions, and face-to-face advice. Multivariate analysis of the attributes of successful trials showed that the number of interventions was strongly associated with the smoking cessation rate (Table 7.1) (Kottke et al., 1988).
Table 7.1

Descriptors for Interventions (Continuous Variables) Reporting Results 12 Months After Initiation of Intervention

<table>
<thead>
<tr>
<th>Descriptors</th>
<th>Range</th>
<th>Mean ± SD</th>
<th>Correlation With Cessation Rate</th>
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<tbody>
<tr>
<td>No. of intervention modalities</td>
<td>1-6</td>
<td>2.1 ± 0.9</td>
<td>.48*</td>
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<tr>
<td>Participant drop-out rate</td>
<td>0%-51%</td>
<td>13.8% ± 12.0%</td>
<td>.05</td>
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<tr>
<td>No. of subject contacts with program</td>
<td>1-15</td>
<td>3.8 ± 4.6</td>
<td>.38*</td>
</tr>
<tr>
<td>Months subject in contact with program</td>
<td>0-12</td>
<td>1.1 ± 2.1</td>
<td>.55*</td>
</tr>
<tr>
<td>No. of participants</td>
<td>32-8189</td>
<td>608.2 ± 948.6</td>
<td>.20</td>
</tr>
<tr>
<td>No. of times smoking status was assessed</td>
<td>1-18</td>
<td>4.0 ± 4.5</td>
<td>.13</td>
</tr>
<tr>
<td>Months from first contact to last verification</td>
<td>0-12</td>
<td>7.6 ± 11.8</td>
<td>.16</td>
</tr>
<tr>
<td>No. of times cessation claims were validated</td>
<td>0-6</td>
<td>0.9 ± 1.2</td>
<td>.09</td>
</tr>
<tr>
<td>Subjective rating of study quality</td>
<td>0-5</td>
<td>3.2 ± 1.0</td>
<td>-.23</td>
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</tbody>
</table>

*p<.01.
Source: Kottke et al., 1988.

Adding nicotine replacement therapy may increase the success rate of counseling alone by up to one-third, particularly in heavy smokers. A meta-analysis of 14 randomized trials of nicotine gum compared to placebo gum found that more patients who used nicotine gum had quit smoking at 6 months (27 percent vs. 18 percent, n=734) and 12 months (23 percent vs. 13 percent), although this study occurred in the setting of specialized smoking cessation clinics. The meta-analysis found lower rates of effectiveness when the treatment occurred in general medical clinics, however. Placebo controlled trials in general practice did not demonstrate an effect, though uncontrolled trials show that nicotine replacement had a modest effect at 6 months (17 percent vs. 13 percent; n=2238) and 12 months (9 vs. 5 percent) in general practice. Given its questionable efficacy in the setting of general practice, we propose
that nicotine replacement be prescribed as second line therapy after counseling alone has failed (Lam et al., 1987).

There are several contraindications for nicotine replacement therapy. Nicotine replacement is contraindicated in women who are pregnant or nursing because it crosses the placenta and is excreted in the breast milk. Patients with recent myocardial infarctions may have their ischemia exacerbated by nicotine replacement and patients with temporomandibular joint disease may experience symptomatic worsening. If the patient continues to smoke, the potential toxicities of nicotine replacement become much more likely. Nicotine gum may not be as effective in the absence of counseling; all the controlled studies combined gum with some form of advice (Lam et al., 1987; Oster et al., 1986; Russell et al., 1983; Benowitz, 1988; Wilson et al., 1988; Fagerström, 1984).

**Follow-up**

The above-mentioned meta-analysis of 39 clinical trials of smoking cessation counseling showed that one of the common attributes of successful programs is reinforcement through follow-up appointments. Both the number of subject contacts with the program and the number of months duration of the program were positively correlated with the cessation rate (see Table 7.1). We propose that the medical record should indicate a plan for such reinforcement either by adding tobacco abuse to the patient’s problem list or through addressing the problem during at least one subsequent visit.
RECOMMENDED QUALITY INDICATORS FOR CIGARETTE USE COUNSELING

These indicators apply to women aged 18-50.

Screening and Initial Evaluation

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Quality of evidence</th>
<th>Literature</th>
<th>Benefits</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Enrollees should have the presence or absence of tobacco use noted in the medical record at the intake history and physical or at least once during the course of a year.</td>
<td>III</td>
<td>ACP, 1986; AAP, 1987; ACOG, 1986; NIH, 1989; USPSTF, 1989</td>
<td>Decrease smoking-related morbidity and mortality.*</td>
<td>Recommended by many medical societies and governmental agencies (see text), though no consensus on optimal screening interval. No trials on screening, but cost is very low. Prerequisite to counseling. Screening increases likelihood of detection and subsequent interventions.</td>
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</table>

Treatment

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>2. Current smokers should receive counseling to stop smoking.**</td>
<td>I</td>
<td>Kottke et al., 1988</td>
<td>Decrease smoking-related morbidity and mortality.*</td>
<td>Meta-analysis of 39 trials of counseling showed 8% decrease in smoking rate at six months and 6% at one year.</td>
</tr>
<tr>
<td>3. If counseling alone fails to help the patient quit smoking, the patient should be offered nicotine replacement therapy (gum or patch).</td>
<td>I-II</td>
<td>Lam et al., 1987</td>
<td>Decrease smoking-related morbidity and mortality.*</td>
<td>Meta-analysis of RCTs of nicotine replacement therapy demonstrated efficacy in setting of specialized smoking clinics; adding nicotine replacement may increase cessation rate by one third. Weaker evidence in general practice.</td>
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<tr>
<td>4. Nicotine replacement should only be prescribed in conjunction with counseling.**</td>
<td>I</td>
<td>Lam et al., 1987</td>
<td>Avert potential side effects of nicotine therapy in patients who will not benefit without concomitant counseling. Decrease smoking-related morbidity and mortality.*</td>
<td>All controlled trials of nicotine replacement combine it with some form of counseling.</td>
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<tr>
<td>5. Nicotine replacement should not be prescribed if the patient: a. is pregnant or nursing b. has had a myocardial infarction in past year c. has temporomandibular joint disease d. continues to smoke</td>
<td>I-II</td>
<td>Benowitz, 1988</td>
<td>Avert premature births, birth defects, potential harm to nursing newborns, ischemic events.</td>
<td>Nicotine crosses placenta and is excreted into breast milk. It can exacerbate ongoing ischemia and worsen symptoms of temporomandibular joint disease. Continuing to smoke makes side effects of nicotine replacement much more likely.</td>
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Follow-up

<table>
<thead>
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<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>6. Tobacco abuse should be added to the problem list of all current smokers or addressed within one year.</td>
<td>I</td>
<td>Kottke et al., 1988; Wilson et al., 1988</td>
<td>Decrease smoking-related morbidity and mortality.*</td>
<td>One of the common characteristics of successful counseling in the Kottke meta-analysis is reinforcement at subsequent visits.</td>
</tr>
</tbody>
</table>

*Smoking has been associated with increased risk of cancer of the lung, trachea, bronchus, lip, oral cavity, pharynx, larynx, esophagus, kidney, bladder, stomach, and pancreas. Smoking also causes or exacerbates COPD, asthma, bronchitis, cerebrovascular accidents and coronary heart disease. Smoking while pregnant is a contributing factor in low birthweight, shortened gestation, and sudden infant death syndrome. Each of these conditions causes a wide range of morbid symptoms and most increase mortality.

**We plan a broad operationalization of counseling to include everything from pamphlets and brief advice in the primary care setting to specialized structured programs.

Quality of Evidence Codes:

I: RCT
II-1: Nonrandomized controlled trials
II-2: Cohort or case analysis
II-3: Multiple time series
III: Opinions or descriptive studies
REFERENCES - CIGARETTE USE COUNSELING


Kottke TE, RN Battista, GH DeFriese, et al. 20 May 1988. Attributes of successful smoking cessation interventions in medical practice: A


