CONSENSUS STATEMENT

A Clinical Practice Guideline for Treating Tobacco Use and Dependence
A US Public Health Service Report

Objective To summarize the recently published US Public Health Service report Treating Tobacco Use and Dependence: A Clinical Practice Guideline, which provides recommendations for brief clinical interventions, intensive clinical interventions, and system changes to promote the treatment of tobacco dependence.

Participants An independent panel of 18 scientists, clinicians, consumers, and methodologists selected by the US Agency for Healthcare Research and Quality. A consortium of 7 governmental and nonprofit organizations sponsored the update.

Evidence Approximately 6000 English-language, peer-reviewed articles and abstracts, published between 1975 and 1999, were reviewed for data that addressed assessment and treatment of tobacco dependence. This literature served as the basis for more than 50 meta-analyses.

Consensus Process One panel meeting and numerous conference calls and staff meetings were held to evaluate meta-analytic and other results, to synthesize the results, and to develop recommendations. The updated guideline was then externally reviewed by more than 70 experts and revised.

Conclusions This evidence-based, updated guideline provides specific recommendations regarding brief and intensive tobacco cessation interventions as well as system-level changes designed to promote the assessment and treatment of tobacco use. Brief clinical approaches for patients willing and unwilling to quit are described. Major conclusions and recommendations include: (1) Tobacco dependence is a chronic condition that warrants repeated treatment until long-term or permanent abstinence is achieved. (2) Effective treatments for tobacco dependence exist and all tobacco users should be offered those treatments. (3) Clinicians and health care delivery systems must institutionalize the consistent identification, documentation, and treatment of every tobacco user at every visit. (4) Brief tobacco dependence treatment is effective, and every tobacco user should be offered at least brief treatment. (5) There is a strong dose-response relationship between the intensity of tobacco dependence counseling and its effectiveness. (6) Three types of counseling were found to be especially effective—practical counseling, social support as part of treatment, and social support arranged outside of treatment. (7) Five first-line pharmacotherapies for tobacco dependence—sustained-release bupropion hydrochloride, nicotine gum, nicotine inhaler, nicotine nasal spray, and nicotine patch—are effective, and at least 1 of these medications should be prescribed in the absence of contraindications. (8) Tobacco dependence treatments are cost-effective relative to other medical and disease prevention interventions; as such, all health insurance plans should include as a reimbursed benefit the counseling and pharmacotherapeutic treatments identified as effective in the updated guideline.

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Panel, Staff, and Consortium Representatives and Financial Disclosures are listed at the end of this article.

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In the past, a failure to intervene with tobacco users could have been attributed to a lack of effective treatments. The last 2 decades, however, have witnessed an explosion in research that has clarified the nature of tobacco dependence as a chronic disease, the addictive nature of nicotine, and the availability of numerous, effective pharmacotherapeutic and counseling strategies for tobacco dependence. Some of these findings led to the release of the Agency for Health Care Policy and Research Smoking Cessation Clinical Practice Guideline in 1996. The development of new treatments since that time now warrants an update of that original guideline.

BACKGROUND

In 1998, a consortium of 7 governmental and nonprofit organizations agreed to sponsor an update to the original Smoking Cessation Clinical Practice Guideline, which was based on a review of published literature through 1994. These agencies—the US Agency for Healthcare Research and Quality; the Office on Smoking and Health at the Centers for Disease Control and Prevention; the National Cancer Institute; the National Institute on Drug Abuse; the National Heart, Lung, and Blood Institute; the Robert Wood Johnson Foundation; and the University of Wisconsin Medical School’s Center for Tobacco Research and Intervention—reconvened the original expert panel to examine the tobacco dependence treatment literature published through 1999. Given the importance of this issue to the health of all Americans, the updated guideline has been published as a United States Public Health Service Report.

The updated clinical practice guideline, *Treating Tobacco Use and Dependence*, is a product of the 18-member Tobacco Use and Dependence Clinical Practice Guideline Panel, consortium representatives, consultants, and staff. These groups comprise more than 30 individuals charged with the responsibility of identifying effective, experimentally validated tobacco dependence treatments and practices. This article summarizes the key recommendations of the updated guideline and highlights differences between the original and updated guidelines. This article is intended to serve as a primer for effective clinic-based tobacco intervention treatments. Readers interested in more details regarding the literature review, data analytic methods, and the consensus process may refer to the updated guideline, which is also located on the Agency for Healthcare Research and Quality Web site (http://www.ahrq.gov). Both this article and the updated guideline target 3 principal audiences: the broad range of primary care clinicians for whom tobacco dependence treatment is just 1 of many activities; tobacco dependence treatment specialists for whom the treatment of tobacco use is a major professional activity; and health care administrators, insurers, and purchasers who have the capacity to implement systems changes that support and encourage tobacco dependence treatments, including reimbursing for these cost-effective treatments.

An overarching theme of the updated guideline is the need to coordinate care among the 3 audiences. Although some particular interventions may be more relevant for certain audiences, all audiences should be aware of and implement, where possible, the full range of effective treatments. Therefore, the updated guideline dissociates the intervention strategies from audience type. Major intervention categories outlined in the updated guideline are brief interventions, intensive interventions, and systems interventions.

One notable change in the updated clinical practice guideline is that the new title, *Treating Tobacco Use and Dependence*, underscores 3 truths about tobacco use. First, all tobacco products, not just cigarettes, exact devastating costs on the nation’s health and welfare. Second, for most users, tobacco use results in true drug dependence, one comparable to the dependence caused by opiates, amphetamines, and cocaine. Third, chronic tobacco use warrants repeated clinical intervention just as do other addictive disorders.

Overview of Guideline Development Procedures

The updated guideline is intended to identify empirically based and validated assessments and treatments for tobacco dependence. The principal steps in the guideline development were similar for both the original and the updated guidelines.

The guideline panel, aided by additional experts in the field, formulated clinically significant questions to be addressed in literature reviews and analyses. Approximately 6000 research articles and abstracts, including 3000 from the original guideline, were reviewed to identify studies appropriate for evaluation. Articles that were relevant were coded for possible use in meta-analyses if they: (1) reported the results of a placebo/comparison-controlled trial evaluating a tobacco use assessment or treatment randomized on the patient level; (2) provided follow-up results at least 5 months after the quit date; (3) were published in a peer-reviewed journal; (4) were published between January 1, 1975, and January 1, 1999; and (5) were published in English. Three independent raters coded features of all articles accepted for possible use in the meta-analyses. Where possible, efficacy analyses used point-prevalence abstinence data that reflected the intent-to-treat principle. Except for pregnancy studies, all follow-up data reflected smoking status at least 5 months following the quit day and included both biochemically confirmed and self-reported data. Pregnancy analyses used preparturition outcomes and data that were exclusively biochemically confirmed. Random-effects logistic regression was used for meta-analysis. Between the original and updated guidelines, many analyses were repeated, but with updated data sets. New studies were added, and a careful application of screening criteria resulted in the exclusion of a small number of studies that had been included in the original guideline analyses. In general, meta-analytic findings were consistent...
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While tobacco use can be a chronic condition, the updated guideline analyses reveal that it can be treated effectively. Although only about 7% of smokers achieve long-term success when trying to quit on their own, updated guideline analyses revealed that success rates can be increased to 15% to 30% by using guideline-recommended treatments. The most effective treatments were intensive counseling and pharmacotherapies. However, even brief treatments such as physician advice to quit can increase abstinence rates significantly.

Moreover, the data document that the full range of interventions is cost-effective. Over time, people who successfully quit use fewer health care resources. In addition, many of the treatments are reimbursable, providing an additional incentive for individual physicians to provide treatment.

**KEY GUIDELINE RECOMMENDATIONS**

**Assessing Tobacco Use**

The first step in treating tobacco use and dependence is to identify tobacco users. At least 70% of smokers visit a physician each year, more than 50% visit a dentist, and many visit other clinicians. Therefore, clinicians are well positioned to intervene with patients who use tobacco. Effective identification of tobacco use status not only opens the door for successful interventions (eg, physician advice), but it guides clinicians to identify appropriate interventions based on patients’ tobacco use status and willingness to quit. Finally, smokers cite a physician’s advice to quit as an important motivator for attempting to stop smoking. Screening methods along with brief interventions are presented in the figure and in Table 1.

**Brief Clinical Interventions**

Brief interventions can be provided by any clinician but are most relevant to primary care clinicians who treat a wide variety of patients and face severe time constraints. The updated guideline analyses suggest that a wide variety of clinicians can effectively implement these strategies and that interventions as brief as 3 minutes can increase cessation rates significantly. In addition, the updated guideline recommends that these interventions be used with all populations, including adolescents, pregnant women, older smokers, and racial and ethnic minorities. However, special consideration should be given to the appropriateness of pharmacotherapy in certain populations (eg, those with medical contraindications, those smoking fewer than 10 ciga-
Table 1. Brief Strategies to Help the Patient Willing to Quit Tobacco Use—The “5 As”

<table>
<thead>
<tr>
<th>Action</th>
<th>Strategies for Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1: Ask</strong>—systematically identify all tobacco users at every visit.</td>
<td>Expand the vital signs to include tobacco use or use an alternative universal identification system.</td>
</tr>
<tr>
<td><strong>In a clear, strong, and personalized manner, urge every tobacco user to quit.</strong></td>
<td><strong>Step 2: Advise</strong>—strongly urge all tobacco users to quit.</td>
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<tr>
<td></td>
<td>Advice should be:</td>
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<tr>
<td></td>
<td>Clear—“I think it is important for you to quit smoking now, and I can help you.” “Cutting down while you are ill is not enough.”</td>
</tr>
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<td></td>
<td>Strong—“As your clinician, I need you to know that quitting smoking is the most important thing you can do to protect your health now and in the future. The clinic staff and I will help you.”</td>
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<tr>
<td></td>
<td>Personalized—Tie tobacco use to current health/illness, and/or its social and economic costs, motivation level/readiness to quit, and/or the impact of tobacco use on children and others in the household.</td>
</tr>
<tr>
<td><strong>Ask every tobacco user if he/she is willing to make a quit attempt at this time (eg, within the next 30 days).</strong></td>
<td><strong>Step 3: Assess</strong>—determine willingness to make a quit attempt.</td>
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<tr>
<td></td>
<td>Assess patient’s willingness to quit:</td>
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<tr>
<td></td>
<td>If the patient is willing to make a quit attempt at this time, provide assistance.</td>
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<tr>
<td></td>
<td>If the patient will participate in an intensive treatment, deliver such a treatment or refer to an intensive intervention.</td>
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<td></td>
<td>If the patient clearly states he/she is unwilling to make a quit attempt at this time, provide a motivational intervention.</td>
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<tr>
<td></td>
<td>If the patient is a member of a special population (eg, adolescent, pregnant smoker, racial/ethnic minority), consider providing additional information.</td>
</tr>
<tr>
<td><strong>Help the patient with a quit plan.</strong></td>
<td><strong>Step 4: Assist</strong>—aid the patient in quitting.</td>
</tr>
<tr>
<td></td>
<td>A patient’s preparations for quitting:</td>
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<tr>
<td></td>
<td>Set a quit date; ideally, the quit date should be within 2 weeks.</td>
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<td></td>
<td>Tell family, friends, and coworkers about quitting, and request understanding and support.</td>
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<td></td>
<td>Anticipate challenges/triggers and how patient will respond to planned quit attempt, particularly during the critical first few weeks. These include nicotine withdrawal symptoms.</td>
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<tr>
<td></td>
<td>Remove tobacco products from your environment. Prior to quitting, avoid smoking in places where you spend a lot of time (eg, work, home, car).</td>
</tr>
<tr>
<td><strong>Provide practical counseling (problem solving/skills training).</strong> (See Table 2)</td>
<td><strong>Abstinence</strong>—Total abstinence is essential. “Not even a single puff after the quit date.”</td>
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<tr>
<td></td>
<td><strong>Past quit experience</strong>—Identify what helped and what hurt in previous quit attempts.</td>
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<td></td>
<td><strong>Anticipate triggers or challenges in upcoming attempt</strong>—Discuss challenges and how patient will successfully overcome them.</td>
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<td></td>
<td><strong>Alcohol</strong>—Since alcohol can cause relapse, the patient should consider limiting/abstaining from alcohol while quitting.</td>
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<td></td>
<td><strong>Other smokers in the household</strong>—Quitting is more difficult when there is another smoker in the household.</td>
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<td></td>
<td>Patients should encourage housemates to quit with them or not smoke in their presence.</td>
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<tr>
<td><strong>Provide intratreatment social support.</strong> (See Table 2)</td>
<td>Provide a supportive clinical environment while encouraging the patient in his/her quit attempt. “My office staff and I are available to assist you.”</td>
</tr>
<tr>
<td><strong>Help patient obtain extratreatment social support.</strong> (See Table 2)</td>
<td>Help patient develop social support for his/her quit attempt in his/her environment outside of treatment. “Ask your spouse/partner, friends, and coworkers to support you in your quit attempt.”</td>
</tr>
<tr>
<td><strong>Recommend the use of approved pharmacotherapy except in special circumstances.</strong> (See Tables 3 and 4)</td>
<td>Recommend the use of pharmacotherapies found to be effective. Explain how these medications increase smoking cessation success and reduce withdrawal symptoms. The first-line pharmacotherapy medications include: sustained-release bupropion hydrochloride, nicotine gum, nicotine inhaler, nicotine nasal spray, and nicotine patch.</td>
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<tr>
<td><strong>Provide supplementary materials.</strong></td>
<td>Sources—Federal agencies, nonprofit agencies, or local/state health departments.</td>
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<tr>
<td></td>
<td>Type—Culturally/racially/educationally/age-appropriate for the patient.</td>
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<tr>
<td></td>
<td>Location—Readily available at every clinician’s workstations.</td>
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<tr>
<td><strong>Schedule follow-up contact, either in person or via telephone.</strong></td>
<td><strong>Step 5: Arrange</strong>—schedule follow-up contact.</td>
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<tr>
<td></td>
<td><strong>Timing</strong>—Follow-up contact should occur soon after the quit date, preferably during the first week. A second follow-up contact is recommended within the first month. Schedule follow-up contacts as indicated. Actions during follow-up contact—Congratulate success. If tobacco use has occurred, review circumstances and elicit recommitment to total abstinence. Remind patient that a lapse can be used as a learning experience. Identify problems already encountered and anticipate challenges in the immediate future. Assess pharmacotherapy use and problems. Consider use or referral to more intensive treatment.</td>
</tr>
</tbody>
</table>
Adults who have never used tobacco or who have been abstinent for an extended period do not require intervention.

For the Patient Willing to Quit. Given that so many tobacco users visit a primary care clinician each year, it is important that these clinicians be prepared to intervene with tobacco users who are willing to quit. The 5 major steps (the “5 As”) to intervention in the primary care setting are: (1) ask the patient if he or she uses tobacco; (2) advise him or her to quit; (3) assess willingness to make a quit attempt; (4) assist those who are willing to make a quit attempt; and (5) arrange for follow-up contact to prevent relapse (Table 1). These strategies are designed to be brief, requiring 3 minutes or less of direct clinician time. Office systems that institutionalize tobacco use assessment and intervention will foster the adoption of these strategies. These strategies are consistent with those of the National Cancer Institute,8,9 the American Medical Association,10 and others.

The updated guideline urges clinicians to provide both counseling and pharmacotherapy for every patient making a quit attempt. The 3 recommended components of counseling (practical counseling, intratreatment social support, and extratreatment social support) are described in Table 2. In addition to counseling, all smokers making a quit attempt should receive pharmacotherapy, except in cases in which pharmacotherapy use requires special consideration (eg, those with medical contraindications, those smoking fewer than 10 cigarettes per day, pregnant/breastfeeding women, and adolescent smokers). Table 3 describes general pharmacotherapy guidelines for smoking cessation and Table 4 provides prescribing instructions for specific medications.

For the Patient Unwilling to Make a Quit Attempt at This Time. For patients not ready to make a quit attempt, clinicians should provide a brief intervention designed to promote the motivation to quit. Patients unwilling to make a quit attempt during a visit may lack information about the harmful effects of tobacco, may lack the required financial resources, may have fears or concerns about quitting, or may be demoralized because of previous relapse.11 Such patients may respond to a motivational intervention designed to educate, reassure, and motivate. Table 5 outlines the components of such a motivational intervention built around the “5 Rs”: relevance, risks, rewards, roadblocks, and repetition. Evidence suggests motivational interventions are most likely to be successful when the clinician is empathic, promotes patient autonomy (eg, choice among options), avoids arguments, and supports the patient’s self-efficacy (eg, by identifying previous successes in efforts to change behavior).12-14

For the Patient Who Has Recently Quit. Because of the chronic relapsing nature of tobacco dependence, clinicians should provide brief relapse prevention treatment for recent quitters. When clinicians encounter such a patient, they should reinforce the patient’s decision to quit, review the benefits of quitting, and assist the patient.
in resolving any residual problems arising from quitting. Although most relapse occurs early in the quitting process, some relapse occurs months or even years after the quit date.

Relapse prevention interventions are especially important soon after quitting and can be delivered by means of either scheduled clinic visits, telephone calls, or any time the clinician encounters an ex-tobacco user. A systematic, institutionalized mechanism to identify recent quitters and contact them is essential to deliver relapse prevention messages effectively. Relapse prevention interventions can be divided into 2 categories: minimal practice for all quitters, and prescriptive interventions for patients with problems maintaining abstinence (Table 6).

### Intensive Clinical Interventions

Intensive tobacco dependence treatment can be provided by any trained clinician who has the resources available to provide intensive interventions. There is substantial evidence that more intensive interventions produce higher success rates and are more cost-effective than less-intensive interventions. Therefore, intensive interventions are appropriate for any tobacco user willing to participate in them and should not be limited to any subpopulation of tobacco users (eg, heavily dependent smokers).

**Table 7** lists components of an intensive intervention.

### Systems Interventions

An increasing number of Americans receive their health care in managed care settings. As a consequence, agents such as health system administrators, insurers, and health care purchasers now play an expanded role in the delivery of health care to most Americans. For example, managed care organizations and other insurers influence medical care through restrictive formularies, performance feedback to clinicians, and marketing approaches that prompt patient demand for particular services.

Indeed, research has shown that systems-level change can increase utilization of tobacco dependence treatment and reduce smoking prevalence among enrollees of managed health care plans.

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Without supportive systems, policies, and environmental prompts, the individual clinician may not assess and treat tobacco use consistently. Therefore, just as clinicians must assume responsibility to treat their patients for tobacco use, so must health care administrators, insurers, and purchasers assume responsibility to craft policies, provide resources, and display leadership that results in consistent and effective tobacco use treatment. The updated guideline describes 6 strategies for systems-level interventions: (1) implement a tobacco user identifica-

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**Table 4. Suggestions for the Clinical Use of Pharmacotherapies for Smoking Cessation**

<table>
<thead>
<tr>
<th>Pharmacotherapy</th>
<th>Precautions/Contraindications</th>
<th>Adverse Effects</th>
<th>Dosage</th>
<th>Duration</th>
<th>Availability</th>
<th>Cost per Day</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First-line</strong></td>
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<tr>
<td>Sustained-release bupropion hydrochloride</td>
<td>History of seizure, History of eating disorders</td>
<td>Insomnia, Dry mouth</td>
<td>150 mg every morning for 3 days then 150 mg twice daily (begin treatment 1-2 weeks prequit)</td>
<td>7-12 weeks maintenance up to 6 months</td>
<td>Prescription only</td>
<td>$3.33</td>
</tr>
<tr>
<td>Nicotine gum</td>
<td>Mouth soreness, Dyspepsia</td>
<td>1-24 cigarettes/d: 2 mg gum (up to 24 pieces/d) ≥25 cigarettes/d: 4 mg gum (up to 24 pieces/d)</td>
<td>Up to 12 weeks</td>
<td>OTC only</td>
<td>$6.25 for 10 2-mg pieces, $6.87 for 10 4-mg pieces</td>
<td></td>
</tr>
<tr>
<td>Nicotine inhaler</td>
<td>Local irritation of mouth and throat</td>
<td>6-16 cartridges/d</td>
<td>Up to 6 months</td>
<td>Prescription only</td>
<td>$10.94 for 10 cartridges</td>
<td></td>
</tr>
<tr>
<td>Nicotine nasal spray</td>
<td>Nasal irritation</td>
<td>8-40 doses/d</td>
<td>3-6 months</td>
<td>Prescription only</td>
<td>$5.40 for 12 doses</td>
<td></td>
</tr>
<tr>
<td>Nicotine patch</td>
<td>Local skin reaction, Insomnia</td>
<td>21 mg/24 h, 14 mg/24 h, 7 mg/24 h, 15 mg/16 h</td>
<td>4 weeks then 2 weeks, then 2 weeks, 8 weeks</td>
<td>Prescription and OTC†</td>
<td>$4.22</td>
<td></td>
</tr>
<tr>
<td><strong>Second-line</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clonidine</td>
<td>Rebound hypertension, Dizziness, Sedation</td>
<td>Dry mouth reaction</td>
<td>0.15-0.75 mg/d</td>
<td>3-10 weeks</td>
<td>Prescription only (oral formulation), Prescription only (patch)</td>
<td>$0.24 for 0.2 mg, $3.50</td>
</tr>
<tr>
<td>Nortriptyline</td>
<td>Risk of arrhythmias, Sedation</td>
<td>Dry mouth reaction</td>
<td>75-100 mg/d</td>
<td>12 weeks</td>
<td>Prescription only</td>
<td>$0.74 for 75 mg</td>
</tr>
</tbody>
</table>

*The information contained in this table is not comprehensive. Please see package inserts for additional information. Prices based on retail prices at a national chain pharmacy, located in Madison, Wis, April 2000. First-line pharmacotherapies have been approved for smoking cessation by the Food and Drug Administration; second-line pharmacotherapies have not. OTC indicates over the counter.
†Generic brands of the nicotine patch recently became available and may be less expensive.

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**Table 5. Enhancing Motivation to Quit Tobacco Use—The “5 Rs” for the Patient Unwilling to Quit at This Time**

<table>
<thead>
<tr>
<th>Relevance</th>
<th>Risks</th>
<th>Rewards</th>
<th>Roadblocks</th>
<th>Repetition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Encourage the patient to indicate why quitting is personally relevant, being as specific as possible. Motivational information has the greatest impact if it is relevant to a patient’s disease status or risk, family or social situation (eg, having children in the home), health concerns, age, sex, and other important patient characteristics (eg, prior quitting experience, personal barriers to cessation).</td>
<td>The clinician should ask the patient to identify potential negative consequences of tobacco use. The clinician may suggest and highlight those that seem most relevant to the patient. The clinician should emphasize that smoking low-tar/low-nicotine cigarettes or use of other forms of tobacco (eg, smokeless tobacco, cigars, and pipes) will not eliminate these risks. Examples of risks are: <em>Acute risks</em>: shortness of breath, exacerbation of asthma, harm to pregnancy, impotence, infertility, increased serum carbon monoxide levels <em>Long-term risks</em>: myocardial infarction and strokes, lung and other cancers (larynx, oral cavity, pharynx, esophagus, pancreas, bladder, cervix), chronic obstructive pulmonary diseases (chronic bronchitis and emphysema), long-term disability and need for extended care <em>Environmental risks</em>: increased risk of lung cancer and heart disease in spouses; higher rates of smoking by children of tobacco users; increased risk for low birth weight, sudden infant death syndrome, asthma, middle ear disease, and respiratory infections in children of smokers</td>
<td>The clinician should ask the patient to identify potential benefits of stopping tobacco use. The clinician may suggest and highlight those that seem most relevant to the patient. Examples of rewards include: improved health; food will taste better; improved sense of smell; save money; feel better about yourself; home, car, clothing, and breath will smell better; can stop worrying about quitting; set a good example for children; have healthier babies and children; not worry about exposing others to smoke; feel better physically; perform better in physical activities; reduced wrinkling/aging of skin.</td>
<td>The clinician should ask the patient to identify barriers or impediments to quitting and note elements of treatment (problem solving, pharmacotherapy) that could address barriers. Typical barriers might include: withdrawal symptoms, fear of failure, weight gain, lack of support, depression, enjoyment of tobacco.</td>
<td>The motivational intervention should be repeated every time an unmotivated patient visits the clinical setting. Tobacco users who have failed in previous quit attempts should be told that most people make repeated quit attempts before they are successful.</td>
</tr>
</tbody>
</table>
tation system in every clinic (Table 1, Step 1); (2) provide education, resources, and feedback to promote provider intervention; (3) dedicate staff to provide tobacco dependence treatment and assess the delivery of this treatment in staff performance evaluations; (4) promote hospital policies that support and provide tobacco dependence services; (5) include tobacco dependence treatments (both counseling and pharmacotherapy) identified as effective in the updated guideline as paid or covered services for all subscribers or members of health insurance packages; and (6) reimburse clinicians and specialists for delivery of effective tobacco dependence treatments, and include these

### Table 6. Components of Brief Strategies to Prevent Relapse to Tobacco Use

<table>
<thead>
<tr>
<th>Problem</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of support for cessation</td>
<td>Schedule follow-up visits or telephone calls with the patient. Help the patient identify sources of support within his/her environment. Refer the patient to an appropriate organization that offers cessation counseling or support.</td>
</tr>
<tr>
<td>Negativity or depression</td>
<td>If significant, provide counseling, prescribe appropriate medications, or refer the patient to a specialist.</td>
</tr>
<tr>
<td>Strong or prolonged withdrawal symptoms</td>
<td>If the patient reports prolonged craving or other withdrawal symptoms, consider extending the use of an approved pharmacotherapy or adding/combining pharmacological medications to reduce strong withdrawal symptoms.</td>
</tr>
<tr>
<td>Weight gain</td>
<td>Recommend starting or increasing physical activity; discourage strict dieting. Reassure the patient that some weight gain after quitting is common and appears to be self-limiting. Emphasize the importance of a healthy diet. Maintain the patient on pharmacotherapy known to delay weight gain (eg, sustained-release bupropion hydrochloride and nicotine replacement therapies, particularly nicotine gum). Refer the patient to a specialist or program.</td>
</tr>
<tr>
<td>Flagging motivation/feeling deprived</td>
<td>Reassure the patient that these feelings are common. Recommend rewarding activities. Probe to ensure that the patient is not engaged in periodic tobacco use. Emphasize that beginning to smoke (even a puff) will increase urges and make quitting more difficult.</td>
</tr>
</tbody>
</table>

### Table 7. Components of an Intensive Smoking Cessation Intervention

<table>
<thead>
<tr>
<th>Component</th>
<th>Strategy of Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment</td>
<td>Assessments should ensure that tobacco users are willing to make a quit attempt using an intensive treatment program. Other assessments can provide information useful in counseling (eg, stress level, presence of comorbidity).</td>
</tr>
<tr>
<td>Program clinicians</td>
<td>Multiple types of clinicians are effective and should be used. One counseling strategy would be to have a medical/health care clinician deliver messages about health risks and benefits and deliver pharmacotherapy and nonmedical clinicians deliver additional psychosocial or behavioral interventions.</td>
</tr>
<tr>
<td>Program intensity</td>
<td>Because of evidence of a strong dose-response relationship, the program should consist of 4 or more sessions, with the longest session lasting longer than 10 minutes, for a total contact time longer than 30 minutes.</td>
</tr>
<tr>
<td>Program format</td>
<td>Either individual or group counseling may be used. Proactive telephone counseling is also effective. Use of adjuvant self-help material is optional. Follow-up assessment intervention procedures should be used.</td>
</tr>
<tr>
<td>Type of counseling and behavioral therapies</td>
<td>Counseling and behavioral therapies should involve practical counseling (problem solving/skills training) and intratreatment and extratreatment social support.</td>
</tr>
<tr>
<td>Pharmacotherapy</td>
<td>Every smoker should be encouraged to use pharmacotherapies endorsed in the updated guideline except in the presence of special circumstances. Special consideration should be given before using pharmacotherapy in selected populations (eg, pregnancy, adolescents) (see Table 3 for general clinical guidelines). The clinician should explain how these medications increase smoking cessation success and reduce withdrawal symptoms. The first-line pharmacotherapy agents include sustained-release bupropion hydrochloride, nicotine gum, nicotine inhaler, nicotine nasal spray, and the nicotine patch.</td>
</tr>
<tr>
<td>Population</td>
<td>Intensive intervention programs may be used with all tobacco users willing to participate in such efforts.</td>
</tr>
</tbody>
</table>

*This conclusion is based upon meta-analyses of studies in which subjects were randomly assigned to treatments of different intensities. Therefore, treatment intensity was not confounded with a subject’s willingness/motivation to remain in treatment. Some studies in the meta-analyses compared active treatments of varying intensities while other studies compared only an active treatment with a control condition.*
TREATING TOBACCO USE AND DEPENDENCE

interventions among the defined duties of clinicians.

**Clinic Training**

Clinicians report the lack of relevant knowledge as a significant barrier to intervening with their patients who use tobacco. The updated guideline, therefore, recommends that all clinicians and clinicians-in-training be trained in effective strategies to assist tobacco users to make a quit attempt and to motivate those who are unwilling to quit. A review of the published literature concluded that training appears to be most effective when coupled with other system changes, such as clinic reminder systems and staff education. Training in tobacco use interventions should not only transmit essential treatment skills but also inculcate the belief that tobacco dependence treatment is a standard of good practice.

**Economic Aspects of Tobacco and Health Systems Interventions**

Smoking cessation treatments ranging from brief clinician advice to specialist-delivered intensive programs are not only clinically effective but are also extremely cost-effective relative to other common disease prevention interventions and medical treatments, such as the treatment of hypertension and hypercholesterolemia, and preventive screening interventions, such as periodic mammography and Papanicolaou tests. Smoking cessation treatments are also extremely cost-effective relative to other common disease prevention interventions and medical treatments, such as the treatment of hypertension and hypercholesterolemia, and preventive screening interventions, such as periodic mammography and Papanicolaou tests. Smoking cessation treatments are also extremely cost-effective relative to other common disease prevention interventions and medical treatments, such as the treatment of hypertension and hypercholesterolemia, and preventive screening interventions, such as periodic mammography and Papanicolaou tests. Smoking cessation treatments are also extremely cost-effective relative to other common disease prevention interventions and medical treatments, such as the treatment of hypertension and hypercholesterolemia, and preventive screening interventions, such as periodic mammography and Papanicolaou tests. Smoking cessation treatments are also extremely cost-effective relative to other common disease prevention interventions and medical treatments, such as the treatment of hypertension and hypercholesterolemia, and preventive screening interventions, such as periodic mammography and Papanicolaou tests. Smoking cessation treatments are also extremely cost-effective relative to other common disease prevention interventions and medical treatments, such as the treatment of hypertension and hypercholesterolemia, and preventive screening interventions, such as periodic mammography and Papanicolaou tests. Smoking cessation treatments are also extremely cost-effective relative to other common disease prevention interventions and medical treatments, such as the treatment of hypertension and hypercholesterolemia, and preventive screening interventions, such as periodic mammography and Papanicolaou tests. Smoking cessation treatments are also extremely cost-effective relative to other common disease prevention interventions and medical treatments, such as the treatment of hypertension and hypercholesterolemia, and preventive screening interventions, such as periodic mammography and Papanicolaou tests. Smoking cessation treatments are also extremely cost-effective relative to other common disease prevention interventions and medical treatments, such as the treatment of hypertension and hypercholesterolemia, and preventive screening interventions, such as periodic mammography and Papanicolaou tests. Smoking cessation treatments are also extremely cost-effective relative to other common disease prevention interventions and medical treatments, such as the treatment of hypertension and hypercholesterolemia, and preventive screening interventions, such as periodic mammography and Papanicolaou tests.

The updated guideline addresses the treatment of tobacco use as it relates to special populations (such as women, pregnant smokers, racial and ethnic minorities, hospitalized smokers, smokers with comorbidity and/or chemical dependency, children and adolescents, and older smokers) and specific topics (such as weight gain after smoking cessation, and noncigarette tobacco products). Readers interested in a detailed discussion of these topics are referred to the updated guideline.

**CONCLUSIONS**

In summary, the updated Guideline Panel’s major conclusions and recommendations are as follows:

1. Tobacco dependence is a chronic condition that often requires repeated intervention. However, effective treatments exist that can produce long-term or even permanent abstinence.

2. Because effective tobacco dependence treatments are available, every patient who uses tobacco should be offered at least one of these treatments: (a) Patients willing to try to quit tobacco use should be provided treatments identified as effective; (b) Patients unwilling to try to quit tobacco use should be provided a brief intervention designed to increase their motivation to quit.

3. It is essential that clinicians and health care delivery systems (including administrators, insurers, and purchasers) institutionalize the consistent identification, documentation, and treatment of every tobacco user seen in a health care setting.

4. Brief tobacco dependence treatment is effective, and every patient who uses tobacco should be offered at least brief treatment.

5. There is a strong dose-response relationship between the intensity of tobacco dependence counseling and its effectiveness. Treatments involving person-to-person contact (via individual, group, or proactive telephone counseling) are effective, and their effectiveness increases with treatment intensity (ie, session length, number of sessions, and total minutes of contact).

6. Three types of counseling and behavioral therapies were found to be es-
pecially effective and should be used with all patients attempting tobacco ces-
sation: (a) provision of practical counsel-
ing (problem solving skills training); (b) provision of social support as part of treatment (intratreatment social support); and (c) help in securing social support outside of treatment (ex- tratreatment social support).

7. Numerous effective pharmacotherapies for smoking cessation now exist. Except in the presence of special circumstances, these should be used with all patients attempting to quit smoking. Special consideration should be given before using pharmacotherapy with selected populations: eg, those with medical contraindications, those smoking fewer than 10 cigarettes/day, pregnant/breastfeeding women, and adolescent smokers. Five first-line phar-
macotherapies were identified that reliably increase long-term smoking abstinence rates: sustained-release bupropion hydrochloride, nicotine gum, nicotine inhaler, nicotine nasal spray, and the nicotine patch. Two sec-
ond-line pharmacotherapies were identified as efficacious and may be con-
sidered by clinicians if first-line pharma-
cotherapies are not effective: cloni-
dine hydrochloride and nortriptyline hydrochloride. Over-the-counter trans-
dermal nicotine patches are effective relative to placebo, and their use should be encouraged.

8. Tobacco dependence treatments are both clinically effective and cost-
effective relative to other medical and disease-prevention interventions. As such, insurers and purchasers should ensure that (a) all insurance plans in-
clude as a reimbursed benefit the counsel-
ing and pharmacotherapeutic treat-
ments identified as effective in the updated guideline; and (b) clinicians are reimbursed for providing tobacco de-
pendence treatment just as they are re-
imbursed for treating other chronic conditions.

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REFERENCES
1. Centers for Disease Control and Prevention. Cigare-
1220.
2. Centers for Disease Control and Prevention. Phyr-
1412.
5. Fiore MC, Bailey WC, Cohen SJ, et al. Smoking Ces-
sation: Clinical Practice Guideline No. 18. Rockville, MD: US Dept of Health and Human Services, Public Health Service, Agency for Health Care Policy and Re-
search; 1996. AHCPR publication 96-0692.
6. Fiore MC, Bailey WC, Cohen SJ, et al. Treating To-
bacco Use and Dependence. A Clinical Practice Guide-
line. Rockville, MD: US Dept of Health and Human Ser-
vices; 2000. AHCPR publication 00-0032.
7. Slade J. Cessation: it’s time to retire the term. So-
ociety for Research on Nicotine and Tobacco News-
8. Glynn TJ, Manley MW. How to Help Your Pa-
tients Stop Smoking: A National Cancer Institute Manual for Physicians. Bethesda, MD: US Dept of Health and Human Services, Public Health Service, Na-
tional Institutes of Health, National Cancer Institute; 1990. NIH publication No. 90-3064.
9. Glynn TJ, Manley MW, Pechacek TF. Physician-
initiated smoking cessation program: the National Can-
10. American Medical Association. American Medi-
cal Association Guidelines for the Diagnosis and Treat-
ment of Nicotine Dependence: How to Help Pa-
11. Rundmo T, Smedslund G, Goteam KM. Motiva-
12. Colby SM, Monti PM, Barnett NP, et al. Brief mo-
tivational interviewing in a hospital setting for ado-
14. Prochaska JO, Goldstein MG. Process of smok-
15. Westman EC, Bem FM, Sinel DL, Rose JE. Smok-
ing behavior on the first day of a quit attempt pre-
16. Zhu SH, Stretcher V, Balabanis M, Rosbrook B, Sadler G, Pierce JP. Telephone counseling for smoking cessa-
tion: effects of single-session and multiple-session inter-
17. Kenford SL, Fiore MC, Jorenby DE, Smith SS, Wet-
18. Brandon TH, Tiffany ST, Obrustem KM, Baker TB. Postcessation cigarette use: the process of relapse. Add-
dict Behav. 1990;15:105-114.
20. Cromwell J, Bartosch WI, Fiore MC, Hasselblad V, Baker T, for the Agency for Health Care Policy and

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Research, though toilsome, is easy; imaginative vision, though delightful, is difficult.
—A. C. Bradley (1851-1935)