

dal focus on long-term treatment strategies for COD or on other risk factors that have culminated in a suicidal event. In this case, treatment becomes long-term prevention. Some persons who are chronically suicidal need special programs that can handle this chronic behavior (American Society of Addiction Medicine 2001).

Among clients with dependence on alcohol, “suicide frequently occurs late in the disease, often in relation to rejection or some interpersonal loss as well as to the onset of medical complications of the illness” (Blumenthal 1988, p. 945). Particular attention should be given to people with long-term dependence on alcohol who are developing medical symptoms, who are experiencing a personal loss or crisis, or who have had a relapse. It is wise to check for suicidal ideation regularly as it can recur. Since relapse is far and away the most dangerous suicide risk in long-term substance abuse treatment clients, the consensus panel recommends a solid long-term recovery plan as the best approach to suicide prevention. In persons with serious and persistent mental disorders, such as bipolar disorder, long-term medication compliance is a key element in preventing suicide. Just as essential as medication and medication compliance, however, is the need to rebuild a sense of hope in the future and engender the belief that recovery from co-occurring disorders is possible and that one has a sense of purpose, value, empowerment, and role in one’s own recovery.

## Nicotine Dependence

Tobacco dependence is the most common substance use disorder in the United States, and cigarette smoking is the primary preventable cause of disease and deaths in the United States. Smoking causes approximately 450,000 premature deaths among people who use tobacco and an additional 50,000 deaths in non-smokers from exposure to environmental tobacco smoke (U.S. Public Health Service, Office of the Surgeon General 2004; Ziedonis and Fiester 2003).

Tobacco dependence is present in most clients in mental health and addiction treatment settings. Individuals with behavioral health disorders spend about \$214 billion annually on tobacco, and account for 44 percent of all cigarettes smoked in the United States (Lasser et al. 2000). More people with alcohol use disorders die from smoking-related diseases than from alcohol-related diseases (Hurt et al. 1996). Smoking is also linked to depression and substance use disorders. Research repeatedly has shown that, compared with the general population, people who smoke are more likely to abuse substances, and people who abuse substances are more likely to smoke cigarettes. Those who abuse alcohol are two to three times more likely to smoke than the general population (Anthony and Echeagaray-Wagner 2000; Gilbert 1995), and up to seven times more likely to smoke heavily (Collins and Marks 1995). There is no simple reason why so many clients in mental health or substance abuse treatment smoke. As with other addictive disorders, it is likely a combination of complex biological and psychosocial factors (Ziedonis and Fiester 2003).

*Nicotine dependence* was first included as a substance use disorder in the *Diagnostic and Statistical Manual of Mental Disorders, Third Edition* (DSM-III) in 1980. The diagnostic criteria for dependence are the same as other substance use disorders. Of note, unlike all other substances, the DSM only recognizes nicotine dependence (there is no diagnosis of nicotine abuse) because most individuals transition quickly and directly from use to dependence and meet criteria of tolerance and withdrawal. The nicotine withdrawal syndrome develops

Tobacco dependence is the most common substance use disorder in the United States.

after abrupt cessation of or a reduction in the use of nicotine products and is accompanied by four of the following signs and symptoms: (1) dysphoria or depressed mood; (2) insomnia; (3) irritability, frustration, or anger; (4) anxiety; (5) difficulty concentrating; (6) restlessness or impatience; (7) decreased heart rate; and (8) increased appetite or weight gain (APA 2000, p. 266). The withdrawal symptoms also must cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.

Although nicotine is thought to be the primary addictive component in tobacco, it is important to remember that not all forms of nicotine are equivalent. The pharmacology and potential for addiction to nicotine is dependent on its route of entry into the body. Smoking is an extremely efficient route of administration, and delivers the fastest and highest-spiking arterial dose of nicotine. Nicotine delivery from smoking produces levels of nicotine in the body that are many times higher than those achieved with use of nicotine replacement therapies (NRT). Therefore, NRT products do not replicate the perceived effect of smoking.

NRT has been found to be safe in cardiovascular disease and safe in persons who use it while continuing to smoke. Several forms are available without prescription (patches, gum, lozenge), since nicotine is not a carcinogen and there is little abuse potential for nicotine when it is administered in forms other than smoking. Nicotine has a pH of 8, making oral absorption poor. NRT products rely on administration through the skin, or buccal (cheek) or nasal mucosa, and are buffered to increase

alkalinity and absorption. Nicotine absorption in the mouth is markedly reduced when it is administered with acidic beverages like sodas, coffee, and juices. Simple instructions not to use the gum, lozenge, or inhaler in conjunction with these beverages can greatly increase the nicotine absorption.

Research has demonstrated that the vast majority of harm associated with cigarettes is attributable to the byproducts of smoking rather than to the effects of nicotine (Slade 1999). In addition to nicotine, unprocessed tobacco smoke includes more than 2,500 compounds, and when manufactured additives and other compounds are taken into account, about 4,000 compounds are present (U.S. Department of Health and Human Services 1988). Smoking is the cause of 90 percent of all lung cancers and nearly all cases of chronic obstructive pulmonary disease, and is associated with a two times greater risk of death from stroke and coronary heart disease. It is also associated with an increased incidence of cancer at a number of other sites, including the larynx, oral cavity, esophagus, cervix, bladder, pancreas, and kidney, and is associated with complications of pregnancy and negative effects on the fetus, including low birth weight (Ziedonis and Fiester 2003; U.S. Public Health Service Office of the Surgeon General 2004). Why do individuals with mental illness or addiction die? Most die of smoking-caused diseases, including cardiac and pulmonary problems, infections, and cancer. Among people who are addicted to narcotics who are in substance abuse treatment, the death rate of smokers is four times that of nonsmokers (Hser et al. 1994). Among people who are in recovery for alcohol abuse who die, 51 percent of mortality is attributed to smoking-related illness, and at 20-year followup the cumulative mortality was 48 percent versus 19 percent expected if a person never smoked (Hurt et al. 1994).

## Differential Diagnosis

Unsuccessful quit attempts, difficulty controlling use, and previous withdrawal symptoms during abstinence are criteria for nicotine

More than two thirds of people who abuse drugs smoke tobacco regularly.

dependence in both the DSM-IV (APA 1994) and the ICD-10 (World Health Organization 1992). These sources provide useful descriptions of clinically observed phenomena, and clinicians are advised to familiarize themselves with diagnostic criteria and withdrawal symptoms (see Figure D-2, p. 341). However, unlike other mental disorders, tobacco dependence diagnostic criteria are rarely used in clinical or research settings. Instead, tobacco dependence is usually conceptualized dimensionally rather than categorically. It should be noted that categorical diagnostic schemes based on DSM criteria are not highly correlated with dimensional assessments, such as the Fagerstrom Test for Nicotine Dependence (Moolchan et al. 2002).

Differential diagnosis is a less pressing clinical issue with tobacco dependence than with other substance use and mental disorders.

Approximately 80 percent of all people who smoke, and virtually all people who smoke daily, are nicotine dependent. DSM-IV diagnostic criteria are identical to those for other substance use disorders, although DSM does not recognize Nicotine Abuse as a diagnostic category.

## Prevalence

Although tobacco dependence is the most common substance use disorder, there are subgroups of individuals with particularly high rates of tobacco dependence. Individuals with mental illness and other substance use disorders are the most common subgroup; however, other important subgroups are known. The prevalence of cigarette smoking is higher at lower socioeconomic levels. Slightly more males than females smoke, although more males than females are successful in stopping smoking. There is evidence that the number of cigarettes smoked per person is increasing, leaving a more hard core and, potentially, more dependent group of people who smoke. There has also been a recent increase in the rate of smoking among adolescents, particularly in the number of teenage girls smoking. This increased smoking rate among adolescents is particularly alarming, as people who smoke typically start

smoking at an early age, with more than 60 percent beginning by age 14, and nearly all by age 18 (Ziedonis and Fiester 2003).

## Tobacco Dependence Among Individuals With Another Substance Use Disorder

Rates of smoking in people with substance use disorders consistently have been shown to be three to four times higher than in the general population (Berger 1972; Richter et al. 2000; Stark and Campbell 1993b), with heavier smoking linked to increased drug or alcohol severity (Hughes 1996; Sussman 2002). More than two thirds of people who abuse drugs smoke tobacco regularly, a rate double that of the rest of the population (Zickler 2000).

An 80 to 90 percent rate of smoking has been found in persons with active alcoholism (Patten et al. 1996). Similar results have been found in people who use illicit drugs, with recent studies finding smoking rates as high as 90 percent among outpatient substance abuse clients (Clarke et al. 2001; Clemney et al. 1997; Stark and Campbell 1993b). Heavy smoking is particularly linked with drinking, with 72 percent of people in treatment for alcohol use disorders smoking heavily, versus 9 percent of the general population (Hughes 1995). Smoking also has been shown to be a predictor of greater problem severity and poorer treatment response (Krejci et al. 2003).

People who smoke and have a history of an alcohol problem find nicotine more reinforcing, and meet more nicotine dependence criteria and withdrawal symptoms (Hughes et al. 2000; 2002). This may make consideration of pharmacological approaches crucial, although some clients in recovery from another addiction prefer to quit without medications. There is growing evidence to suggest that many people in substance abuse treatment are interested in smoking cessation treatment simultaneously (Joseph et al. 2002; Saxon et al. 1997), although there is still some debate as to the best time for tobacco treatment during substance

abuse treatment. A recent study by Joseph and colleagues (2003), comparing the timing of tobacco dependence treatment, showed no difference in number of quit attempts, smoking abstinence, or use of NRT between those who received tobacco treatment concurrent with substance abuse treatment, and tobacco treatment that was delayed for 6 months after initiating intensive substance abuse treatment. The overall quit rates were comparable to the general population, with about 18 percent achieving abstinence at 1 year.

Surveys have reported that prevalence rates of smoking in clients in methadone maintenance programs are between 85 and 98 percent (Berger 1972; Stark and Campbell 1993a). Smoking status is predictive of illicit substance use in methadone programs and increases in a stepwise fashion from people who do not smoke, to people who smoke but are nondependent, to people who smoke heavily (Frosch et al. 2002). There is a significant positive relationship during treatment between rates of change in heroin use and rates of change in tobacco use.

## **Tobacco Dependence Among Individuals With Mental Illness**

The prevalence of smoking is high among people with all types of mental illnesses, including schizophrenia (70 to 90 percent), affective disorders (42 to 70 percent), and anxiety disorders, especially agoraphobia and panic disorder. Conversely, there is also evidence that affective, anxiety, and substance use disorders may be more common in individuals who smoke than in those who do not or in those who have never smoked. The presence of depressive symptoms during withdrawal is also associated with failed cessation attempts (APA 1996; Ziedonis and Fiester 2003).

Smokers with schizophrenia are more likely to be current smokers (58 to 88 percent versus 23 percent) (Centers for Disease Control and Prevention 2001; National Institute on Drug Abuse [NIDA] 1999), to smoke more (Kelly and

McCreadie 1999), and to have ever smoked daily (De Leon et al. 2002). They also smoke more “efficiently” by inhaling more deeply and smoking more of each cigarette (Olincy et al. 1997). People with schizophrenia are less successful in quitting smoking, both in naturalistic settings (Lasser et al. 2000) and in tobacco-dependence treatment trials (Williams and Hughes 2003). Although smoking rates are elevated among all people with mental disorders, individuals with schizophrenia are more likely to smoke than those with other mental disorder diagnoses (De Leon et al. 2002). In addition, smokers with schizophrenia are more likely to experience smoking-related morbidity and mortality than the general population of smokers (Brown et al. 2000; Dalack et al. 1998). The effect of tobacco is that medications are metabolized faster and are cleared from the body more efficiently, causing smokers with schizophrenia to be prescribed higher medication doses. As a result, these people also experience greater medication side effects such as tremor (Kelly and McCreadie 1999), rigidity (Gideon et al. 1994), and possibly tardive dyskinesia (Nilsson et al. 1997).

## **Key Issues and Concerns**

### ***Timing of the quit attempt***

A major clinical issue is the timing of the quit attempt. Should an individual try to quit all substances at the same time? Clinicians tend to endorse this strategy for all substances but tobacco. Although there is debate about the best time for tobacco treatment for people in substance abuse treatment, studies suggest that tobacco treatment does not jeopardize recovery from other substances and might improve the outcomes for the other substance use disorder.

Should nicotine dependence treatment be timed to a specific stage of recovery from a mental disorder? There are very limited data to guide this decision other than clinical judgment. Clinical experience suggests that treating tobacco dependence during outpatient treatment when mental disorder symptoms are somewhat

stable appears to be an excellent time to target interventions. Of note, managing tobacco dependence through forced abstinence because of environmental tobacco smoke concerns is necessary, and addressing this issue with appropriate dosages of NRT is warranted.

### ***Effect of tobacco abstinence on psychiatric medication blood levels***

Tobacco (not nicotine) is metabolized in the liver by the P450/1a2 isoenzyme, and tobacco's metabolism actually increases the metabolism rate of certain psychiatric medications such as haloperidol, fluphenazine, olanzapine, and clozapine. When an individual stops smoking tobacco, the liver enzymes P 450/1a2 become less active and metabolize the psychiatric medications at a slower rate. Therefore there will be an increase in the blood levels of those medications, potentially causing an increase in the medication's side effects or other adverse events, including noncompliance with the medication due to the side effects (APA 1996; Ziedonis and Fiester 2003).

### ***Effect of tobacco abstinence on mental disorders***

Some clinicians are concerned about whether tobacco abstinence will worsen mental illness or jeopardize recovery from other substances. This is an important area that needs more research; however, research and clinical experience support the ability of people to quit and not induce relapses or severe worsening of their mental illness. The studies to date report that nicotine dependence treatment for this population is safe and usually well tolerated. However, there have been reports of some increases in psychiatric symptoms during the acute detoxification phase (APA 1996; Ziedonis and Williams 2003b).

### ***Effect of trying to quit smoking on recovery from other addictions***

Until recently, substance abuse treatment clinicians generally have not addressed the issue of tobacco dependence or provided treatment largely because of the belief that the added stress of quitting smoking would jeopardize the recovery from alcohol or other substances. Research has not confirmed this belief. One study evaluated the progress of residents in an alcoholism treatment facility who were concurrently undergoing a standard smoking cessation program (i.e., experimental group) (Hurt et al. 1994). A comparison group of people with alcohol use disorders who smoked participated in the same program but without undergoing the smoking cessation program. One year after treatment, results indicated that the smoking cessation program had no effect on abstinence from alcohol or other drugs. In addition, 12 percent of the subjects in the experimental group, but none of the subjects in the comparison group, had stopped smoking. Some data suggest that addiction recovery may facilitate nicotine abstinence. In one study, clients participating in concurrent treatment for nicotine addiction during residential treatment for alcohol and other drug abuse achieved at least a temporary reduction in smoking and an increased motivation to quit smoking (Joseph et al. 1990).

Following the lead of other health facilities, many substance abuse treatment facilities are becoming smoke free, providing a "natural experiment" on the effectiveness of dual recovery programs. Initial evaluations suggest that

The prevalence of smoking is high among people with all types of mental illnesses.

no-smoking policies are feasible in this setting (Martin et al. 1997). However, no outcome studies have been performed, and additional research is needed.

### ***Effect of tobacco use on craving and other drugs***

Researchers have found that craving for tobacco appears to increase craving for illicit drugs among people with substance use disorders who also smoke tobacco. This relationship suggests that people who smoke and are in drug treatment programs may be less successful in staying off drugs than people who do not smoke. Recent research has found that cues that elicited craving for tobacco also elicited craving for

the person's drug of choice. This suggests that situations that produce tobacco craving also may result in craving for drugs of abuse (Taylor et al. 2000). The findings suggest that substance abuse treatment efforts will benefit from a more complete understanding of the interrelationships between tobacco and drug craving (Taylor et al. 2000). In a study among patients on

Nicotine dependence can be thought of as a chronic, relapsing illness.

methadone maintenance, tobacco craving and heavy smoking appeared to contribute to increased use of cocaine and heroin (Frosch et al. 2000). In a study of people with alcohol use disorders, researchers at Purdue University concluded that alcohol alone can prompt people who smoke to crave a cigarette. In a study of rats, Canadian scientists found evidence that the nicotine in cigarettes can induce a craving for alcohol (Le et al. 2000) among rats trained to drink alcohol. Alcohol consumption increased 20 percent after nicotine exposure

and consumption decreased 30 percent after mecamylamine exposure. The researchers hypothesized that nicotine receptors are involved in alcohol consumption and/or self-administration (Le et al. 2000).

### ***Motivation to quit among individuals with substance use or mental disorders***

Many people in mental disorder and substance abuse treatment settings are interested in quitting tobacco, even if the interest is not immediate. In one study 75 percent of substance abuse treatment inpatients accepted the offer of smoking cessation treatment (Seidner et al. 1996). In another study, 53 percent of outpatients reported moderate interest in quitting (Kozlowski et al. 1989). Further, one study of methadone maintenance patients found that 61 percent planned to quit within 6 months, 57 percent were very interested in an on-site cessation program, and 80 percent were interested in nicotine replacement products (Clemmey et al. 1997). Still another study found that 72 to 94 percent of outpatients were not yet ready to quit (Abrams et al. 1996). In conclusion, there often is interest in quitting tobacco, but there is variability in the interest level and there is a need to provide encouragement and support to those who are considering quitting smoking.

### ***Realistic expectations: Tobacco dependence is like other addictions***

Nicotine dependence, like other substance use disorders, can be thought of as a chronic, relapsing illness with a course of intermittent episodes alternating with periods of remission for most people who smoke. Only about 3 percent of quit attempts without formal treatment are successful, and in recent years about 30 percent of people who smoke and who want to quit are seeking treatment. Outcomes for nicotine dependence treatment vary by the type of treatment and the intensity of treatment, with specific reports of 1-year abstinence rates following

treatment ranging from about 15 to 45 percent. Cessation attempts result in high relapse rates, with the relapse curve for smoking cessation paralleling that for opioids. Most individuals relapse during the first 3 days of withdrawal and most others will relapse within the first 3 months (APA 1996; Ziedonis and Fiester 2003). Like any other substance, individuals can relapse to tobacco in any stage of recovery.

## Strategies, Tools, and Techniques

### Engagement

People entering treatment for substance use or mental disorders rarely intend to receive treatment for nicotine dependence. They may be surprised or even annoyed by questions about their smoking. It is important to initially integrate assessment questions about nicotine dependence into an overall assessment and treatment plan, and to be prepared to revisit the topic throughout the course of treatment. This should be done in an empathic and non-judgmental manner, emphasizing the clinician's concern for the client's general health and well-being. Initial interventions should be tailored to the client's stage of change (Prochaska et al. 1992), with a focus in the earlier stages on providing information, exploring ambivalence, eliciting client concerns, and beginning to envision the possibility of quitting.

For people who smoke who are not yet ready to quit, the clinician can do effective motivational interventions that will keep the client thinking about quitting at some time in the future. Discussing reasons for the person to consider quitting—for example, carbon monoxide (CO) monitor readings, costs, short- and long-term health consequences of smoking, benefits of quitting specific to the individual, and the factors that may have prevented an attempt—is important. Written materials about tobacco dependence and treatment options with brief advice to quit is one method of providing such information and increasing motivation. Another is to follow the “5 Rs” as outlined in

the Surgeon General's guidelines (U.S. Public Health Service, Office of the Surgeon General 2004):

- **Relevance:** Encourage the client to indicate why quitting could be personally relevant, being as specific as possible.
- **Risks:** Motivational information has the greatest impact if it is relevant to a client's disease status or risk, family or social situation (e.g., having children in the home), health concerns, age, gender, and other important client characteristics (e.g., prior quitting experience, personal barriers to cessation).
- **Rewards:** Elicit from clients possible benefits of quitting, with a particular focus on identifying short-term benefits that they will notice immediately.
- **Roadblocks:** Help the client to identify barriers or impediments to quitting. Typical barriers might include withdrawal symptoms, fear of failure, weight gain, lack of support, depression, or enjoyment of tobacco.
- **Repetition:** The motivational intervention should be repeated every time an unmotivated client visits the clinical setting. People who use tobacco and who have failed in previous quit attempts should be informed that most people make repeated quit attempts before they are successful.

Preparation for quitting may include self-monitoring or keeping a diary of smoking, planning rewards for successful abstinence, seeking additional information about treatment, purchasing the medication to aid in quitting, attempting to not smoke in certain situations or locations (such as the car, in the house) to enhance perceived self-control over smoking, and making a list of reasons for and potential benefits of quitting. Sources of social support should also be identified.

### Screening and assessment

All clients should be screened for tobacco use beginning with an assessment of current and past patterns of tobacco use (number of

cigarettes smoked per day, times during the day, location, and circumstances). For individuals who currently smoke, a more comprehensive assessment should be completed (see text box below).

In addition to self-reported amount of tobacco use, the amount of tobacco usage can be assessed more objectively through cotinine or CO levels. Cotinine levels can be obtained from the urine, blood, or saliva to assess the amount of nicotine ingested. Cotinine is a primary metabolite of nicotine and remains in the body for several weeks. The expired-air test for a CO level is inexpensive and can be obtained within a minute by any clinician with a CO meter. The CO meter is useful at intake and to monitor for relapse. Higher cotinine and CO levels are associated with a higher number of cigarettes per day and also severity of nicotine withdrawal. Despite the usefulness of these biochemical measures, they are frequently unavailable in clinical settings.

Assessment of tobacco withdrawal symptoms in the past and during the early abstinence period can be helpful. Clients can be educated that

these symptoms will reduce substantially after 2 weeks (see Figure D-2).

The severity of nicotine dependence can be assessed with the Fagerstrom Test for Nicotine Dependence (FTND) (see Figure D-3, p. 342), a six-item, self-report measure that has been shown to predict withdrawal symptom and craving severity (Payne et al. 1994). Two questions from the FTND that assess the number of cigarettes per day and time elapsed before the first cigarette have been shown to perform about as well as the full scale (Hajek et al. 2001; Kozlowski et al. 2004). As a clinical guideline, those who smoke at least 10 cigarettes per day have moderate nicotine dependence, while those who smoke more than 20 cigarettes per day have high nicotine dependence. Similarly, those who smoke within 60 minutes of waking can be considered to have moderate dependence, and those who smoke within 30 minutes of waking can be considered to have high dependence. Because of the unique social circumstances of people with schizophrenia, the FTND may not be an ideal measure of nicotine dependence for this population. For example, items intended to assess

## ***Assessing Nicotine Use and Nicotine Dependence***

- Current and past patterns of tobacco use (include multiple sources of nicotine)
- Severity of tobacco dependence (e.g., Fagerstrom Scale)
- Current motivation to quit
- Breath CO level or cotinine level (saliva, blood, urine)
- Assess prior quit attempts (number of attempts and what happened in the more recent attempts), why the client quit, how long the client was abstinent, why the client relapsed, what treatment did the client use (how was it used and for how long)
- Assess withdrawal symptoms
- Psychiatric and substance use histories
- Medical conditions
- Common triggers (car, people, moods, home, phone calls, meals, etc.)
- Perceived barriers against quitting and supports for treatment success
- Preference for treatment strategy

Source: Ziedonis and Fiester 2003.



the need to smoke in response to overnight abstinence may elicit artificially low scores among people who smoke who are not permitted to smoke first thing in the morning by group home staff, day treatment staff, or family members with whom they live (Steinberg et al. 2004a).

Assessment of a client's prior tobacco treatment and cessation attempts should include the nature of the prior treatments, length of abstinence, timing of relapse, and factors specifically related to relapse (e.g., environmental or interpersonal triggers). Assessing prior treatments

includes assessing medications and psychosocial treatments. Important information about medications includes asking about the dose level of medications and for how long they were taken; any side effects that developed; and how the client actually took the medication.

Psychosocial treatments might include group or individual treatment, American Lung Association and other community support groups, hypnosis, acupuncture, or attendance at Nicotine Anonymous meetings. A history of specific withdrawal symptoms and their severity and duration is critical, as is an assessment of the person's social and environmental contexts;

### **Figure D-2** **DSM-IV Criteria for Nicotine Withdrawal**

- A. Daily use of nicotine for at least several weeks.
- B. Abrupt cessation of nicotine use, or reduction in the amount of nicotine used, followed within 24 hours by four (or more) of the following:
  - (1) dysphoric or depressed mood
  - (2) insomnia
  - (3) irritability, frustration, or anger
  - (4) anxiety
  - (5) difficulty concentrating
  - (6) restlessness
  - (7) decreased heart rate
  - (8) increased appetite or weight gain
- C. The symptoms in criterion B cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.

The symptoms are not due to a general medical condition and are not better accounted for by another mental disorder.

Associated features:

- Craving for nicotine
- Desire for sweets
- Impaired performance on tasks requiring vigilance
- EEG slowing
- Decrease in catecholamine and cortisol levels
- Decreased metabolism of medications and other substances

Source: APA 2000, p. 266. Reprinted with permission.

for example, whether other household members smoke and the availability of family and social supports (Ziedonis and Fiester 2003).

An assessment should be made of the person's reasons for quitting and his or her motivation, commitment, and self-efficacy (perceived ability to quit). The individual's stage of readiness for stopping smoking is also important; that is, whether the person is not yet seriously considering stopping smoking (precontemplation), is considering attempting to quit but not for several months (contemplation), is seriously considering quitting in the next month and has begun to think about the necessary steps to stop smoking (preparation), or is actually attempting to stop smoking (action).

*Patient motivation:* Although 70 percent of

people who smoke express an interest in quitting, only 8 percent are planning to make a quit attempt in the next month (Wewers et al. 2003). Stages of change can be assessed using the following simple algorithm:

- Client is not planning to quit in the next 6 months (precontemplation)
- Client is planning to quit in the next 6 months, but not the next month (contemplation)
- Client is planning to quit in the next month (preparation)

*Client self-efficacy:* Clients with little confidence in their ability to quit are less likely to make a quit attempt and less likely to succeed if they do.

**Figure D-3**  
**The Fagerstrom Test For Nicotine Dependence**

Question	Answer	Score
How soon after you wake up do you smoke your first cigarette?	Within 5 minutes 6–30 minutes 31–60 minutes > 60 minutes	3 2 1 0
Do you find it difficult to refrain from smoking in places where it is forbidden?	Yes No	1 0
Which cigarette would you hate to give up the most?	The first one in the morning Others	1 0
How many cigarettes per day do you smoke?	< 10 11–20 21–30 > 31	0 1 2 3
Do you smoke more frequently during the first hours after waking than during the rest of the day?	Yes No	1 0
Do you smoke if you are so ill that you are in bed most of the day?	Yes No	1 0
Scores are totaled to yield a single value, with scores of 6 or more indicating high nicotine dependence.		

*Environmental factors and social support:* People who smoke find it harder to quit when they live and work alongside other people who smoke, have a high current stress level, or have a history of mental disorders. This is particularly true in mental disorder treatment settings or communal living arrangements where clients are commonly exposed to staff and other clients who smoke.

*Client beliefs about smoking and quitting:* For example, older adults who smoke may believe that they are less likely to be able to quit, or that they will experience few health benefits if they do so. In fact, most studies find the opposite—that older adults who smoke, (i.e., who have smoked the longest) have a higher probability of success on any given quit attempt (Stapleton et al. 1995). Similarly, some clients and clinicians believe that nicotine causes cancer and that NRTs are dangerous. This is clearly not the case, and addressing this common misconception can help to increase motivation to quit.

## **Interventions**

The U.S. Public Health Service Clinical Practice Guideline on Treating Tobacco Use and Dependence (Fiore et al. 2000a) advises clinicians to use the “5 A’s” (Ask, Advise, Assess, Assist, Arrange Followup) with every person who uses tobacco who shows a willingness to quit (see chapter 8 for more information). The 5 A’s are a brief and simple tobacco intervention that has been shown to increase the quit rates in primary care settings (Katz et al. 2002). Unfortunately, they are rarely implemented by clinicians treating clients in behavioral healthcare settings. This may be because clinicians are unsure how to implement them in daily practice, or because the guideline gives little information on the assessment of tobacco use in these complex clients.

## **Treatment Planning**

All clients who smoke should have tobacco dependence as a problem listed in their treatment plans and motivation-based treatment

plans written to match their motivation to address tobacco. Those with less motivation can receive written information and motivational interventions. For clients interested in tobacco dependence treatment a “quit date” should be selected. After cessation, close monitoring should occur during the early period of abstinence. Before the quit date, the person should be encouraged to explore and organize social support for the self-attempt. Plans to minimize cues associated with smoking (e.g., avoiding circumstances likely to contribute to relapse) are important, as is considering alternative coping behaviors for situations with a higher potential for relapse. A telephone or face-to-face followup during the first few days after cessation is critical because this is the time that withdrawal symptoms are most severe, and 65 percent of patients relapse within 1 week. A followup face-to-face meeting within 1 to 2 weeks allows a discussion of problems that have occurred (e.g., difficulties managing craving) and serves as an opportunity to provide reinforcement for ongoing abstinence. Even after the early period of abstinence, periodic telephone or face-to-face contacts can provide continued encouragement to maintain abstinence, allow problems with maintaining abstinence to be addressed, and provide feedback regarding the health benefits of abstinence. Figure D-4, p. 344, provides several strategies for counselors to use in helping clients stop smoking.

## **How To Treat Tobacco Dependence**

Before making a quit attempt, clients should know the psychopharmacological options (i.e., NRT and bupropion) and what to expect while trying to quit. This knowledge may inoculate people who smoke from the frustration they might otherwise experience with the discomfort of quitting. Clients should know about the withdrawal symptoms they may experience, the fact that many people quit several times before quitting successfully, and the potential for minor weight gain. Clinicians should also discuss the timing of the quit attempt to maximize

**Figure D-4**  
**Brief Strategies for Smoking Cessation**

Action	Strategies for Implementation
Help the client with a quit plan.	<p>A client’s preparations for quitting</p> <ul style="list-style-type: none"> <li>• <i>Set a quit date</i>—ideally, the quit date should be within 2 weeks.</li> <li>• <i>Tell family, friends, and coworkers</i> about quitting and request understanding and support.</li> <li>• <i>Anticipate</i> challenges to planned quit attempt, particularly during the critical first few weeks. These include nicotine withdrawal symptoms.</li> <li>• <i>Remove</i> tobacco products from your environment. Prior to quitting, avoid smoking in places where you spend a lot of time (e.g., work, home, car).</li> </ul>
Provide practical counseling (problem solving/skills training).	<p><i>Abstinence</i>—Total abstinence is essential. “Not even a single puff after the quit date.”</p> <p><i>Past quit experience</i>—Identify what helped and what hurt in previous quit attempts.</p> <p><i>Anticipate triggers or challenges in upcoming attempt</i>—Discuss challenges/triggers and how client will successfully overcome them.</p> <p><i>Alcohol</i>—Since alcohol can cause relapse, the client should consider abstaining from alcohol while quitting.</p> <p><i>Other smokers in the household</i>—Quitting is more difficult when there is another smoker in the household. Clients should encourage housemates to quit with them or not smoke in their presence.</p>
Provide intra-treatment social support.	Provide a supportive clinical environment while encouraging the client in his or her quit attempt. “My office staff and I are available to assist you.”
Help client obtain extra-treatment social support.	Help client develop social support for his or her quit attempt in his or her environments outside of treatment. Have the client ask his or her spouse/partner, friends, and coworkers to support the client in the quit attempt.
Recommend the use of approved pharmacotherapy, except in special circumstances.	Recommend the use of pharmacotherapies found to be effective in this guideline. Explain how these medications increase smoking cessation success and reduce withdrawal symptoms. The first-line pharmacotherapy medications include bupropion SR, nicotine gum, nicotine inhaler, nicotine nasal spray, and nicotine patch.
Provide supplementary materials.	<p><i>Sources</i>—Federal agencies, nonprofit agencies, or local/State health departments.</p> <p><i>Type</i>—Culturally/racially/educationally/age appropriate for the client.</p> <p><i>Location</i>—Readily available at every clinician’s workstation.</p>
Source Fiore et al. 2000a, b.	

the chances for success. In contrast to other drugs of abuse, it is recommended that people who smoke take 2 to 4 weeks to prepare for the quit date. Clients with few mental health problems may be ready in 2 weeks, while people with more serious mental illnesses should take longer to prepare. Once a quit date is set, a decision must be made regarding making an abrupt or gradual change. Making a gradual change has the disadvantage of making each cigarette more enjoyable as the number of cigarettes decreases, with the result that the last few cigarettes may be very difficult to give up.

Other preparatory strategies include using “behavioral disconnects,” publicizing the planned quit attempt, and creating a detailed coping plan for dealing with cravings after the quit date. Behavioral disconnects involve using the preparation time to practice not smoking in the client’s usual contexts. For example, if the client is accustomed to smoking while speaking on the telephone, he or she can practice speaking on the phone without smoking cigarettes. This strategy has the dual benefit of increasing self-efficacy if done successfully and of decreasing psychological cravings in the presence of the client’s usual smoking cues.

By publicizing the planned quit attempt, the client is likely to feel more committed to following through on the quit day. It is helpful to tell as many significant others as possible, including all friends, family, coworkers, and so on. Telling other treatment staff is also important, as supportive treatment staff can play a key role in encouraging the change. The client should also be informed of the potential effects of smoking on psychotropic medications, as aromatic hydrocarbons (tar) in the tobacco smoke increases the metabolism of many of the medications the client may be taking. Upon quitting smoking, the medications may need to be adjusted accordingly.

Publicizing the planned quit attempt will also help in gathering the social support needed to be successful. Significant others who do not smoke are likely to be supportive, and those who do smoke can be put on notice that they

should not offer cigarettes or sabotage the quit attempt. The detailed coping plan should include having a reference sheet with several individualized reasons for quitting, names and phone numbers of supportive others to call, and a list of distracting activities, preferably those that are inconsistent with smoking (e.g., exercising, playing with children).

As the quit date approaches, stimulus control techniques should be implemented, such as removing all tobacco product cues (e.g., cigarettes, lighters, ashtrays) from the client’s environment. The client should also make sure others do not smoke in the home, be prepared to sit in non-smoking areas, and avoid smoking cues that can be avoided.

Avoiding smoking cues is often difficult for people who smoke and have other substance use or mental disorders. Clients with other substance use disorders may be faced with smoke-filled 12-Step program meetings, sponsors who smoke, or even sponsors who discourage them from quitting. Clients with mental disorders may be faced with group home housemates who smoke and day treatment programs populated by people who smoke. It is helpful to have other supportive treatment staff to intervene in these circumstances to facilitate the quit attempt. Regardless of the co-occurring disorder, it is important to take into account the specific deficits or circumstances secondary to the disorder.

An in-person or telephone followup contact should occur within 2 days of the quit date. Clinicians and clients should have an action plan for managing a lapse or relapse, and this plan should be activated if the client slips and has a cigarette. After the client has quit, relapse prevention strategies should be used. Popularized by Marlatt and Gordon (1985), relapse prevention is a well-established, empirically based approach using cognitive-behavioral therapy techniques to teach people to avoid and/or cope with triggers to use addictive substances. Since cravings or urges to use addictive substances are common issues for clients seeking treatment for substance use dis-

orders (including nicotine dependence), clients are taught how to manage and cope with these feelings and avoid smoking cues whenever possible. Common cues for smoking include the people, places, and things associated with tobacco use as well as negative mood states like anger or sadness. These cues can trigger smoking behavior and can be lessened through psychosocial interventions.

## **Medications for nicotine dependence treatment**

Six medications have received Food and Drug Administration (FDA) approval for nicotine dependence treatment, and the practice guidelines recognize these medications as first-line treatments (Fiore et al. 2000a). These treatments are effective for about 25 to 30 percent of people in the general population who smoke on any one attempt, and this rate increases with combined psychosocial treatment. These medications have similar success rates but have side effect differences.

The five types of NRTs are administered in a variety of ways: nicotine polacrilex (gum), nicotine transdermal patch, nicotine inhaler, nicotine nasal spray, and the nicotine lozenge.

These medications are similar in how they reduce nicotine withdrawal and urge to smoke, and improve abstinence rates and client satisfaction. The only FDA-approved non-nicotine treatment is bupropion SR (marketed as Zyban SR) for tobacco addiction and Wellbutrin SR for treatment of depression. Bupropion's effect on tobacco dependence, however, is independent of depression status.

Relapse prevention uses social skills training to teach drug refusal skills.

Bupropion SR has proven effectiveness in clients with or without past depression medication treatment.

Most people who smoke and who have mental disorders smoke heavily. People who smoke heavily usually have higher CO and cotinine levels, higher Fagerstrom nicotine dependence scores, more nicotine withdrawal symptoms, and experience mood difficulties during withdrawal. There is some evidence to suggest titrating the dosage of NRT to the cotinine levels in the client. People who smoke heavily may have improved outcomes with higher NRT dosages (multiple NRTs simultaneously, multiple NRT patches), adding bupropion SR, and integrating behavioral therapies. There is one report that high-dose patch treatment resulted in 40 percent fewer withdrawal symptoms and 2.5 times greater reductions in craving in a pilot study of people with schizophrenia who smoked, and was well tolerated, although larger trials are needed.

## **Specific psychosocial treatments for tobacco dependence**

Psychosocial treatments for nicotine dependence are among the first-line treatments in several practice guidelines (APA 1996; Fiore et al. 2000a). Because behavioral health treatment providers (i.e., those treating substance use and/or mental disorders) possess many of the skills needed to provide tobacco dependence services, intensive interventions may be well suited to a mental or substance use disorder treatment setting. Data support the use of psychosocial interventions for tobacco dependence as provided by various counselor disciplines (e.g., physicians or nonphysicians), and via multiple treatment modalities (e.g., telephone, group, and individual counseling). Although there is a clear dose-response relationship between counseling intensity and success, even very brief counseling can increase quit rates (Fiore et al. 2000a).

Despite the strong evidence that psychosocial treatments are effective for treating tobacco dependence, only 5 percent of people who smoke who make a 24-hour quit attempt receive counseling as part of their treatment (Zhu et al. 2000). Clients who are motivated to quit smoking should be taught general problemsolving skills, provided with social support as part of counseling, and assisted in gaining social support from family and friends for their quit attempt.

Psychosocial interventions have been successfully adapted for people with schizophrenia who smoke (Addington et al. 1998; George et al. 2000; Steinberg et al. 2004a; Ziedonis and George 1997), depression (Hall et al. 1994, 1995, 1996, 1998, 1999), and substance use disorders (e.g., Burling et al. 2001; Patten et al. 1998, 2001). Successful adaptation involves blending traditional mental health services with tobacco dependence treatments while addressing the unique problems associated with the specific mental disorder. Integrating medications with these psychosocial treatments is also very important, since these groups are often highly dependent on tobacco.

While clinicians are often hesitant to help clients with serious mental illness who smoke to quit smoking, the Clinical Practice Guideline (Fiore et al. 2000a) recommends that tobacco use be addressed in all clients who smoke. While many excuse smoking in this population, it should be recognized that smoking exacerbates many existing problems. When compared with people who do not smoke, those with schizophrenia who smoke exhibited more positive symptoms of schizophrenia (Goff et al. 1992; Ziedonis et al. 1994) and experienced more hospitalizations than their counterparts who did not smoke (Goff et al. 1992; Kelly and McCreadie 1999). People with schizophrenia who smoke often are prescribed more antipsychotic medication than people with schizophrenia who do not smoke, due to an increased metabolism of many psychiatric medications secondary to the “tar” or aromatic polynuclear hydrocarbons—not due to nicotine (Goff 1992; Hughes 1993; Ziedonis 1994). They also experience greater medication side effects such as

tremor (Kelly and McCreadie 1999), rigidity (Ziedonis et al. 1994), and possibly tardive dyskinesia (Nilsson et al. 1997). Tobacco use also depletes their already scarce financial resources. Cigarettes may constitute up to 27 percent of the monthly budget for people with schizophrenia who smoke (Steinberg et al. 2004a). A recent study indicated that a brief motivational interviewing intervention was effective in motivating people with schizophrenia who smoked to seek formal tobacco dependence treatment (Steinberg et al. 2004b).

Relapse prevention also uses social skills training to teach drug refusal skills. Since seeing others smoke is a strong predictor for relapse, this approach is very important for those living in a group home or attending a substance abuse treatment or mental health services setting where smoking may be ubiquitous. Specialized treatments for this group should incorporate techniques for reducing the appeal of smoke breaks and learning to avoid “bumming” cigarettes or accepting an offered cigarette. Interactive teaching through role playing can enhance this type of learning and allow for real-world practicing. Raising awareness of the stigma related to these drug-seeking and drug-use behaviors can also help to change behavior. Creating a relapse analysis is helpful to understand the role of “seemingly irrelevant decisions” in the path toward a relapse. An example of a “seemingly irrelevant decision” might be a relapse to smoking after dining in the smoking section of a restaurant rather than sitting in the nonsmoking section.

Relapse prevention also distinguishes between a “lapse” and a “relapse” as a matter of degree and severity. There is a focus on trying to avoid letting a “lapse” become a “relapse” by quickly managing the situation and framing it as a learning opportunity in an effort to return to abstinence. This model allows for some mistakes as the client is working toward a goal of abstinence. Figure D-5 (p. 348) presents strategies for helping clients address situations that may lead to relapse.