

Smoking and Mental Illness: Strategies to Increase Screening, Assessment, and Treatment

Douglas Ziedonis, M.D., M.P.H., Smita Das, M.D., Ph.D., M.P.H., Makenzie Tonelli, B.A.

Tobacco use disorder is the most common substance use disorder among individuals with any other psychiatric disorder, resulting in enormous health disparities, shorter lifespan, increased suicide risk, and reduced quality of life compared with others, due in part to general medical conditions caused or worsened by tobacco use. Tobacco use can have financial, employment, relationship, and other personal consequences. Mental health and addiction treatment settings have historically ignored tobacco use; however, psychiatrists and others have recently recognized their crucial role in helping patients to quit. A culture change is needed that values addressing tobacco use in behavioral treatment settings to support the integration of evidence-based practices for assessing and treating tobacco use disorder. This clinically focused article provides up-to-date information for practicing psychiatrists on how to increase screening, assessment, and treatment of tobacco use disorder. Clinical tools, such as the carbon monoxide meter, can easily be integrated into practice to assess patients and motivate quitting. Other aids to help patients recover from tobacco use disorder include nicotine replacement therapy medications, simple and effective brief psychosocial interventions, and free community resources. Psychiatrists must not only be aware of the changes in common psychiatric medication blood levels that occur when patients change their smoking status but also know the amounts of nicotine in tobacco products, including emerging tobacco products and e-cigarettes. Mounting evidence supports the mental and physical health benefits of quitting tobacco use and the effectiveness of using traditional tobacco use disorder treatments in helping people with psychiatric disorders quit use.

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Tobacco use disorder is the most common substance use disorder among individuals with another psychiatric disorder. Smokers with mental illness consume 44% of all cigarettes in the United States (1), and 50%–95% of patients in mental health and clinical treatment settings smoke (2–5). Methadone maintenance programs and inpatient psychiatry units often have the highest rates of tobacco use, in the range of 75%–95% (6). Tobacco use increases morbidity and mortality rates and is the leading preventable cause of death in the United States. People with serious mental illness die on average 25 years earlier than the general population, often because of tobacco-related diseases (cardiac diseases, pulmonary diseases, and cancers) (7, 8). In addition, tobacco use worsens other health conditions, including wound healing, diabetes, impotence, and osteoporosis (9–11). Furthermore, there is a probable independent association between suicide and current smoking and longer lifetime smoking duration (12, 13). In a recent analysis (14), longer lifetime smoking (≥ 41 years compared with ≤ 10 years) was associated with higher odds of suicide (odds ratio=2.26, 95% confidence interval=1.30–3.93). It is also suggested that smoking cessation can mitigate the risk (15). Tobacco use can also reduce housing options, discretionary income, and employment and relationship options, and it can

increase insurance costs and the stigma associated with smoking (16, 17).

CLINICAL CONTEXT FOR ASSESSING AND TREATING TOBACCO USE DISORDERS

Psychiatrists have a great opportunity to help improve the overall quality of their patients' lives by identifying tobacco users in their practice, enhancing motivation to quit, and helping patients with their quit attempts. Historically, many psychiatrists have accepted the belief that they should only address the more immediate psychiatric problems and that quitting tobacco use might worsen a patient's psychiatric symptoms. Tobacco's health risks were minimized by rationalizing tobacco as a way to self-medicate (18, 19). A growing body of literature, including epidemiological studies, invalidates the false belief that smoking offers mental health benefits. Contrary to this belief, accruing evidence exists that demonstrates substantial improvement in mental health and quality of life as a result of tobacco cessation, especially among individuals with a psychiatric or substance use disorder (20, 21). Interestingly, evidence also supports the inverse, in which smoking has been linked to a higher likelihood of new-onset

mental health disorders (22). A recent systemic review and meta-analysis conducted by Taylor et al. (23) assessed 26 studies evaluating mental health variables before and after smoking cessation. Their analyses revealed a significant decrease in anxiety, depression, and stress as well as improvements in overall mood and quality of life among quitters compared with nonquitters. Of note, the strength of this relationship was no different among individuals with a psychiatric diagnosis compared with those without a psychiatric diagnosis. Research demonstrates that psychiatric patients can successfully and safely stop tobacco use even while quitting other substances or when stabilizing their psychiatric condition (24). The acute nicotine withdrawal phase may be more severe for some smokers with certain psychiatric comorbidities; however, these individuals are able to quit with overall stable mental health and much better physical health, quality of life, finances, and often lower dosages of psychiatric medication (24, 25). This article will help psychiatrists increase their efforts at managing tobacco use disorder. Psychiatrists can serve an important role in treating this disorder, and they can lead the cultural change in mental health and addiction treatment settings to promote wellness and denormalize tobacco use.

Many psychiatric patients are interested in quitting tobacco use as outpatients and even as inpatients. One study showed that 65% of smokers with serious mental illness were interested in quitting (26). Evidence-based treatments include seven medications approved by the Food and Drug Administration (FDA), psychosocial interventions, and free community resources such as the quitlines. These are effective for individuals with psychiatric disorders, with some additional issues to consider in treatment planning. Smokers with mental illness are often “heavy smokers,” consuming relatively larger amounts of nicotine per day and often requiring higher levels of nicotine replacement medication (Table 1 [26–44]). Counseling support is important and needs to address specific concerns, such as stress, which can be framed acutely as nicotine withdrawal, and concerns about weight gain, which is usually manageable if within the average gain of 3–5 pounds. Personalizing the health and life benefits for quitting tobacco use is important to enhance and maintain motivation. Another important clinical issue is having social support when quitting, which can be minimal for some patients. Helpful sources of social support include nonsmoking friends and family, recovery support networks such as Nicotine Anonymous, or recovery centers. Medication blood levels will rise for many medications that are metabolized through the cytochrome P450 CYP1A2 isoenzyme when patients stop smoking, and these medication dosages might need to be reduced, which can be seen by patients as a benefit from quitting tobacco use.

This clinically focused article provides up-to-date information for practicing psychiatrists on how to increase screening, assessment, and treatment of tobacco use disorder for their patients no matter the extent of the patient’s motivation to quit, psychiatric acuity, and level of care. Helping patients quit tobacco use is part of promoting wellness and recovery.

Psychiatrists are leaders in creating culture change in mental health and addiction treatment settings, and there are excellent resources for leading organizational change for tobacco-free campuses, integrating evidence-based treatments, and training other clinical staff (24, 45–47).

TREATMENT STRATEGIES AND EVIDENCE

The Five A’s

A common model used to help clinicians organize treatment of tobacco use disorder is the 5 A’s model: ask, advise, assess, assist, and arrange follow-up (Box 1). A minimum standard of this approach is the AAR model of ask, advise, and refer. All tobacco users should have tobacco use or tobacco use disorder on their problem list and treatment plan, with strategies for increasing motivation to quit or information on how to quit, perhaps including psychosocial treatment, education, community resource referral, and medication options and guidance.

Ask about tobacco use (first A). Screening (and documenting) current and past tobacco use of all psychiatric patients is recommended by “meaningful use” practice guidelines (4, 48). The two most important questions to ask are 1) “Tell me about your tobacco use?” and 2) “Are you interested in quitting tobacco use?” Patients who acknowledge that they use tobacco and want help should be offered help through the development of a quit plan with medication and psychosocial treatment options, including community resources. Patients who are not ready to quit will benefit from a longer evaluation phase and from treatment geared toward persons with lower motivation. All patients who are tobacco users should have tobacco use disorder noted on their treatment plan.

When initially asking about tobacco and nicotine use, start with open-ended questions and make a transition to all-inclusive and specific questions (e.g., “Tell me about your tobacco use?” “Do you use any tobacco products, such as cigarettes, cigars, smokeless tobacco, or e-cigarettes?”). If a patient answers yes, try to quantify the amount and frequency of use. Generally, individuals who smoke within the first 30 minutes after awakening and/or who smoke >20 cigarettes per day (one pack per day) are more heavily dependent and will likely need higher dosages of nicotine replacement medication. Similarly, if the patient answers no to current tobacco use, there is a need for follow-up to clarify past or somewhat recent use (e.g., “Did you use tobacco products in the past?” “Have you used any tobacco product in the last 30 days, even a puff of a cigarette, for example?”).

In addition to purchasing cigarettes, psychiatric patients are now more frequently using roll-your-own cigarettes, cigars, pipes, tobacco chew, or emerging tobacco products such as snus, hookahs, dissolvable tobacco, or electronic nicotine delivery systems (e-cigarettes). Use of these other products is rising. Among adults who are current tobacco users, surveyed between 2012 and 2013 in the National Adult Tobacco Survey, the lifetime prevalence of ever being an everyday user of other emerging tobacco products was as follows: cigars, cigarillos, or

TABLE 1. Tobacco Use and Specific Psychiatric Comorbidity Subtypes^a

Disorder and treatment group	Epidemiology and Data	Tips for Treatment
Disorder		
Schizophrenia	Smoke at nearly 3 times the rate of the general population (90% prevalence) (27–29) Smoking behavior is reinforced by a subjective sense of improving psychiatric symptoms or cognitive functioning; also may have less neuroleptic-induced parkinsonism (30, 31) Efficiently smoke cigarettes, smoking filters and discarded butts that are high in nicotine (32, 33) Medication levels may be affected and can be a life-threatening consequence (see the pharmacotherapy section) Those taking atypical antipsychotics such as risperidone, clozapine, or olanzapine were approximately 3 times more successful in quitting and reducing cigarette smoking than those treated with the older, first-generation antipsychotics (34)	Monitor medication levels when possible (i.e., clozapine), because quitting smoking can affect dosing needs. May need higher doses of NRT, because people in this group have higher nicotine levels when they smoke
Depression	Depression is twice as common in smokers as in nonsmokers and is 4 times as common in heavy smokers (35) Depressive symptoms can make early abstinence difficult People who are predisposed to nicotine dependence may also be predisposed to depression Cigarette smoke has MAOI activity that may lead to reinforcing effects of smoking (because there is increased action of the neurotransmitters norepinephrine, serotonin, and dopamine) Weight gain (5 lb [2.25 kg] on average) that occurs with quitting smoking may be important to this group, especially as it relates to affect and antidepressants Smokers with comorbid depression smoke more heavily than the average smoker (36)	May need more medications to aid in attempt Consider bupropion to treat tobacco dependence Even subclinical depression can make a quit attempt more difficult, so monitor mood Discuss weight and weight gain (5 lb [2.25 kg]) Relapse prevention therapy may be integrated with CBT treatments of depression
Anxiety	Smoking is a risk factor for the onset of panic disorder. Although smoking can lead to panic attacks, the reverse relationship (that panic attacks lead to smoking) is unlikely and is not supported by research findings (37) PTSD is also associated with rates of smoking, at roughly 60% (38). In heavy smokers with PTSD, there are more total PTSD symptoms as well as increased cluster C (avoidance and numbing) and cluster D (hyperarousal) symptoms (39) Patients may report subjectively that smoking reduces anxiety, but studies show that chronic nicotine use is related to increased anxiety (40, 41)	Withdrawal may be difficult for smokers with anxiety, especially in early quit periods; NRT may help ease this
Substance use	Smokers have a 2–3 times greater risk for alcohol dependence compared with nonsmokers (42), and those with alcohol dependence have dramatically increased rates of smoking (43) Smoking rates are 3 times higher and quit rates 4 times lower than the U.S. population (44) There is worsened combined morbidity and mortality from concurrent smoking and alcohol dependence; although notably, more alcoholics die from smoking-related diseases than from alcohol-related diseases Treating tobacco dependence does not worsen other substance use and may even improve sobriety	Integrating smoking cessation into the quit plan can take advantage of the same behavioral techniques used in their substance use disorder
Treatment group		
Adolescents	Adolescent tobacco users are twice as likely to have a history of a mental illness or a substance use problem compared with those who do not use tobacco Common psychiatric problems are disruptive behavior disorders (especially oppositional defiant disorder, conduct disorder, and, to a lesser extent, attention-deficit hyperactivity disorder), major depressive disorder, and substance use disorders Adolescent tobacco smokers are 4 times as likely to also use alcohol, 8 times more likely to use marijuana, and 22 times more likely to use cocaine	Need parental consent for pharmacotherapy

continued

TABLE 1, continued

Disorder and treatment group	Epidemiology and Data	Tips for Treatment
Inpatients	Among hospitalized smokers with mental illness, 65% were interested in quitting (26)	Start NRT in the hospital to help reduce withdrawal; this can also reduce hospital anxiety and agitation
	Many psychiatric facilities are nonsmoking areas; this is the perfect opportunity to allow the smoker to get through the most difficult symptoms and period of withdrawal	On discharge, prescribe NRT for continuity

^a CBT, cognitive-behavioral therapy; MAOI, monoamine oxidase inhibitor; NRT, nicotine replacement therapy; PTSD, posttraumatic stress disorder.

filtered little cigars, 12.8%; regular pipes, 12.6%; water pipes or hookahs, 1.2%; e-cigarettes, 17.9%; chewing tobacco, snuff, or dip, 48.1%; dissolvable tobacco products, 16.8%; and snus, 11.3% (49). Table 2 (50–65) provides details on specific types of emerging products and their nicotine content. For further reading, the American Heart Association offers an excellent online resource about e-cigarettes (66).

A full assessment of tobacco use and tobacco use disorder includes evaluating the severity of the disorder, tobacco withdrawal symptoms, previous quit attempts and types of treatment, motivation to quit, social support for quitting, medical conditions, and preference for treatment. Using 11 DSM-5 criteria (Box 2), the severity of tobacco use disorder can be graded as either mild (two or three symptoms), moderate (four or five symptoms), or severe (six or more symptoms). Because most tobacco users with serious mental illness are classified as having severe symptoms, the clinical tool of the carbon monoxide (CO) score or the confirmation of being a heavy smoker (>20 cigarettes per day or having a first cigarette in the first 30 minutes after awakening) can be more helpful in medication management (4).

Every psychiatrist should consider purchasing and using a CO meter to help with screening and assessment. *Current Procedural Terminology* code 94250 for “expired gas collection” can be used and often will be reimbursed as a procedure by insurance companies. With this tool (similar in appearance to the alcohol Breathalyzer), a simple, noninvasive, and fast breath test procedure can be performed to determine the patient’s CO and estimated blood carboxyhemoglobin levels. The CO level is elevated in smokers and has 200 times the affinity for hemoglobin as oxygen, thereby reducing oxygen availability to vital organs such as the brain, heart, and lungs. Smokers generally have expired CO concentrations of 10–50 ppm, depending on the amount of tobacco they routinely smoke and the timing of their last tobacco use. Within 2–3 days of quitting, levels usually decrease to <5 ppm, with 3–4 days being a distinguishable cutoff point to determine abstinence (nonsmoker levels) (67). This is a powerful motivating procedure that generates great conversation with the patient and clear personalized feedback for quitting while progress is being monitored (Box 3). Psychiatrists are encouraged to provide, as part of the assessment and feedback phase, an explanation of how CO affects the body, including how CO prevents oxygen from attaching to the blood and how this action affects muscles as well as brain, heart, and other

organ function. In addition to the CO meter (which provides immediate feedback within 1 minute), measurement of cotinine levels (from blood, saliva, and urine) is another biochemical test that can assess nicotine levels from tobacco use and/or compliance with nicotine replacement therapy (NRT). Cotinine, an active metabolite of nicotine, can be detected for up to 2 weeks after the last tobacco use; at low levels, cotinine can also indicate secondhand smoke exposure.

Advise the patient to quit (second A). After asking about use, advise a patient to quit and have a tailored personalized message (e.g., “Quitting smoking can be one of the most important things you can do for your health, and in your case....”). Relate quitting to the patient’s medical comorbidities, costs for tobacco per year, CO meter score, and quality-of-life issues (employment, relationships, pet’s health, secondhand smoke, etc.).

Assess the patient’s desire to quit (third A). As discussed previously, assess the patient’s motivation to immediately quit. If the patient indicates readiness, continue to a quit plan. For those who are not ready to quit, complete a more in-depth motivational assessment, including the pros and cons of quitting as well as importance and confidence rulers for quitting (described in the section below on strategies for lower-motivated patients). Assessing for a desire to quit increases the chances of quitting and informs next steps and strategies for the treatment plan. A starter question may be “What are your thoughts about quitting?” with a follow-up such as “Would you have any interest in quitting in the next month?”

Assist patients (fourth A). Psychiatrists can assist all patients who use tobacco or have a tobacco use disorder by either increasing their motivation to quit or by setting and preparing for a quit date (includes managing or referring the patient to others to provide psychosocial and medication treatments). Many helpful community resources are available to connect patients with sources for support and to monitor their engagement (Box 4). We suggest specific strategies that psychiatrists can use to help individuals with either lower or higher motivational levels to quit using tobacco.

Arrange follow-up (fifth A). The fifth A is a reminder that tobacco use disorder is an addiction and will likely take several quit attempts and support to achieve long-term recovery.

BOX 1. The Five A's: Ask, Advise, Assess, Assist, and Arrange Follow-Up

1. Ask about tobacco use: screen (and document) current and past tobacco use.

Open-ended → all-inclusive and specific questions: “Tell me about your tobacco use?” “Do you use any tobacco products, such as cigarettes, cigars, smokeless tobacco, or e-cigarettes?”

Yes: Understand type and quantify amount and frequency of use.

No: “Did you use tobacco products in the past?” “Have you used any tobacco product in the last 30 days, even a puff of a cigarette, for example?”

- Smoking within the first 30 minutes after awakening and/or smoking >20 cigarettes per day indicates more dependent users.
 - Assess for *DSM-5* criteria, withdrawal symptoms, prior quit attempts, types of treatment, social support for quitting, and medical conditions.
 - Use a CO meter to assess smoking: a level of 15–50 ppm indicates a smoker (0–5 ppm in 2–3 days of quitting).
2. Advise the patient to quit (or reinforce people who have quit) with a tailored message.
 - “Quitting smoking can be one of the most important things you can do for your health.”
 - “People with psychiatric diagnoses suffer from smoking-related illnesses.”
 - Personalize the message with information on comorbidities (physical and psychiatric) or motivation for quitting.
 3. Assess the patient's desire to quit.
 - Ask “What are your thoughts about quitting?,” with a follow-up question such as “Would you have any interest in quitting in the next month?”
 4. Assist patients.

Strategies for lower-motivated patients are as follows:

- For those patients who are in the precontemplation or contemplation stages, listen to their reasons for not being in the preparation stage.
- Try to increase motivation by providing information on CO meter scores, money spent, other disorders, increasing freedom—such as broadening options in relationships and creating more job opportunities—effects of tobacco smoke on loved ones (family, friends, and pets), longer lifespan, and fewer sick days.
- Assess pros and cons of quitting and ask patient to rate importance of and confidence in quitting.
- Consider the five R's: relevance, risks, rewards, roadblocks, and repetition (revisit the conversation in the future).

Strategies for higher-motivated patients are as follows:

- Engage in shared decision making.
 - Assess for triggers to plan for relapse prevention (followed by asking a question such as “How can we plan for those difficult situations?”).
 - Reassure the patient that the worst withdrawal occurs within the first 2 weeks.
 - Discuss the “quit plan” and help prepare for the “quit date.”
 - Provide a prescription for one or a combination of seven FDA medications for tobacco use disorder.
 - Encourage some form of counseling support (e.g., community resources, counseling, or as part of medication management).
5. Arrange follow-up.
 - Set up follow-up counseling to support cessation and prevent relapse.
 - Assess engagement with community resources/other providers.
 - Encourage the patient to follow up with you as the psychiatric provider who is addressing the tobacco use disorder in the treatment plan.
 - Suggest that the patient engage with the state's tobacco quitline (1-800-QUIT-NOW).

Follow-up counseling to promote cessation and prevent relapse increases the likelihood of successful quit attempts. Follow-up support can include assessing treatment engagement (i.e., evaluating how well the patient is continuing a small-steps plan, connecting with other providers, and using community resources, including a state's quitline [1-800-QUIT-NOW]).

Strategies for Lower-Motivated Patients

Lower-motivated patients may be discouraged from past unsuccessful quit attempts, may not fully appreciate the risks of smoking and benefits of quitting, may have low self-

efficacy, may lack support, and/or may have fears related to stress or weight gain. Empathically listening to concerns and providing personalized feedback can be done quickly and effectively, and this feedback can include CO meter scores, dollars per year spent on tobacco, and information on health issues (25). Personalized feedback can include increased freedom, increased options in relationships (more people are non-smokers, fresher breath, etc.), more job opportunities (smokers may have fewer options in some cases), effect of tobacco smoke on their loved ones (family, friends, and pets), longer life, and fewer sick days from other activities, including work.

Briefly discussing the pros and cons of tobacco use and asking the patient to rate the importance of and his or her confidence in quitting successfully can lead the patient to reveal more self-motivational statements. For example, the psychiatrist might ask the patient “How important is it for you to quit tobacco use?” and offer a scale of 1–10, with 10 being “very important.” After the patient responds, the psychiatrist can reflect back in a positive way to any answer by selecting a number lower than what the patient has given. For example, the patient might say “I am a 3 on importance” and the psychiatrist might then say “a 3—that is pretty good—why is it more important to you to quit than, say, a rating of 2?” This strategy will lead to the revelation of self-motivational statements, including reflection on why patients are more motivated than perhaps they were at an earlier point in time. Sometimes problem solving on common roadblocks raised in the discussion (fear of failure, demoralization from previous relapses, weight gain concerns, stress management, and lack of nontobacco-using friends) can be helpful as a small step to increase the motivation to quit.

Other strategies require more than a few minutes. The *Learning About Healthy Living* manual (68), with handouts for both lower- and higher-motivated patients, is an excellent free online resource (www.nysmokefree.com/ConfCalls/CCNYSDownloads/UMDNJLearningAboutHealthyLiving.pdf). Materials from this manual can be given to the patient as an educational tool in many different settings. Treatment programs have successfully implemented this manual-based group therapy in the form of wellness groups (46, 69, 70). For some, attending Nicotine Anonymous meetings (face to face or over the phone) can be a venue to listen and learn more about possible means of support and strategies for quitting.

Similar to the 5 A's, the 5 R's gives a helpful mnemonic reminder of key issues for psychiatrists to discuss with lower-motivated patients. The 5 R's include relevance (understand what is important to patients for quitting, such as their health issues, CO score, or financial costs), risks (review their health, financial, and social consequences), rewards (incentives to quit), roadblocks (barriers to quitting and ideas to address them), and repetition (revisit the conversation in the future).

Strategies for Higher-Motivated Patients

For those patients who are ready to quit, psychiatrists can set a quit date and strategize on ways to manage cravings, address anxiety/mood fluctuation of withdrawal, and prevent relapse. The quit plan has to be acceptable to and realistic for the patient. Reassuring the patient that the worst withdrawal occurs within the first 2 weeks and will become less intense across time provides hope. Most patients who seek help quitting tobacco use receive only pharmacologic treatment support (71); however, psychiatrists are adept at integrating some psychosocial treatment into routine psychopharmacology, including engaging with free community resources. Behavioral therapy alone has similar efficacy as NRT medication alone; integrating medications and psychosocial treatments

improves clinical outcomes by approximately 50% (48). Treatment of tobacco use disorder can be integrated into current treatment sessions (rather than just stand-alone).

Preparing for the quit date includes removing tobacco products from the house, informing others of the quit date to also assess who might be supportive, and having a discussion about the medications and how to anticipate managing cravings and cues to cravings. Evidence-based treatments of tobacco use disorder include cognitive-behavioral or mindfulness-based interventions. Cognitive-behavioral approaches help patients learn to identify cues and triggers and how to avoid or manage them, including seeking social support, managing cravings by distracting or delaying use, or avoiding people, places, and things that trigger cravings. Mindfulness-based approaches help patients become more present in the moment and recognize cravings as inevitable and finite; thereby patients can embrace curiosity about the craving and appreciate that a thought does not mean an action must follow (4, 24, 48, 69).

Community Resources and Peer Support Options

Free community resources can be a source of information and support for patients. Quitlines provide individual coaching over the phone and sometimes with free NRT. The 1-800-QUIT-NOW number works in all states. There are web sites and apps for those who prefer computer support (i.e., www.becomeanex.org and www.ffsonline.org). Nicotine Anonymous is available every day via national phone-line meetings and local face-to-face meetings. Nicotine Anonymous follows the same principles and approaches as Alcoholics Anonymous. Psychiatrists can help patients engage, address barriers to engagement, and assess how the patient is doing with the program. In addition to the peer support of Nicotine Anonymous, there are other specific resources (72), including peer specialists, peer web sites (www.njchoices.org), training modules for peer specialists (rxforchange.ucsf.edu), and information for clubhouses (www.genesisclub.org).

Pharmacotherapy to Treat Tobacco Use Disorders

Adult smokers who smoke 10 cigarettes per day should be given pharmacotherapy options (48). The seven FDA-approved medications include five NRTs, bupropion (Zyban), and varenicline (Chantix). NRT patches, gum, and lozenges are available over the counter, whereas NRT inhalers, NRT nasal sprays, varenicline, and bupropion are available by prescription only (Table 3). Ongoing tobacco use is very harmful for individuals with cardiac illness or for those who are pregnant or breastfeeding; however, there are contraindications or precautions to consider when prescribing pharmacotherapy for these populations. There is less evidence in smokeless tobacco users, adolescents (require parental consent), and lighter smokers (<10 cigarettes per day). All smokers should be given the option of using pharmacological aids (Table 3). The American Academy of Family Physicians has published a helpful resource on medications (www.aafp.org/dam/AAFP/documents/patient-care/tobacco/pharmacologic-guide.pdf).

TABLE 2. Emerging Tobacco and Alternative Tobacco Products

Product	Nicotine Amount		Format of Packaging and Use	Common Brands
	Total Nicotine Content	Blood Plasma Nicotine Yield		
Smoked				
Cigars, little cigars, and cigarillos	Because of the wide range of sizes in which cigars are offered, there is a large variance in the amount of nicotine that one might contain. Cigars typically contain around 100–200 mg but can contain as much as 444 mg (51–53)	The amount of nicotine absorbed through cigar smoking greatly varies and is contingent on a number of factors, including the duration of time and the number of puffs the smoker takes to smoke the entire cigar and whether the smoker inhales. Proportional to the total nicotine amount and yield of cigarettes, it can be estimated that cigars yield anywhere from 9 to 68 mg of nicotine	Tobacco leaves are rolled and tightly packed with dried and fermented tobacco, forming a cylindrical shape for smoking. A little cigar is the smallest version and is equivalent to the size of a standard cigarette. A cigarillo is a slightly larger and narrower version. The largest variety of cigars can measure ≥7 inches in length (52)	Swisher Sweets, Dutch Masters, Phillies, Cheyenne, Derringer (large cigars and cigarillos); Universal, Bodyshot (little cigars) (50)
Waterpipe or hookah	Nicotine content can range from 1.8 to 6.3 mg per gram of tobacco (54)	Exposure is suggested to be comparable to that of a cigarette (55). However, there is strong variance in nicotine exposure influenced by a variety of determinants, including the burning temperature, type of tobacco, individual smoking patterns, and duration of smoking session (a 1-hour hookah session equates to approximately 200 puffs or 10 cigarettes, an estimate yield of roughly 10–20 mg of nicotine per 1-hour session) (57)	This is a device used for smoking tobacco that delivers cooled charcoal tobacco smoke, which passes through water before it is inhaled	Al Fakher, Al Waha, Nakhla, Romman, Fumari, Sahara Smoke Company (56)
Nontobacco				
Electronic cigarettes (e-cigarettes; also referred to as electronic nicotine delivery systems)	The amount of nicotine in the e-liquid ranges in strengths of 6–24 mg/mL (1 cartridge) (58)	On average, 50%–60% of nicotine in a cartridge is inhaled as vapor by the user (i.e., approximately 0.25–0.77 mg of nicotine per 15 puffs). Most cartridges deliver up to 150 puffs (i.e., roughly 2.5–7.7 mg per cartridge) (59)	This is a battery-powered device designed to mimic a cigarette, supplying nicotine in an e-liquid cartridge that is inhaled as vapor, rather than by burning tobacco, and it is offered in flavored options	V2 Cigs, Vapor Fi, Halo Cigs, Apollo, South Beach Smoke (56)
Smokeless				
Chewing tobacco and snuff	One dip or pouch is equivalent to 5 cigarettes, whereas 1 can, containing 144 mg of nicotine, equates to smoking 4 packs of cigarettes (60)	Typically, the nicotine yield can range from 3.6 to 4.5 mg. Of note, compared with the 7 seconds it takes for the brain to respond to nicotine from a drag of a cigarette, the same effect can be delayed to	Chew is a more finely ground form of tobacco packaged in a tin can and is directly placed as a wad between the gum and the cheek to allow nicotine to be absorbed by the mouth tissue. Snuff is provided in the	Chew: Red Man, Chattanooga Chew; snuff: Bruton, Copenhagen, Skoal, Grizzly, Kodiak (61, 62)

continued

TABLE 2, continued

Product	Nicotine Amount		Format of Packaging and Use	Common Brands
	Total Nicotine Content	Blood Plasma Nicotine Yield		
		up to 30 minutes for chew or snuff users, although it is continuously delivered for up to 60 minutes after use, whereas nicotine delivery ceases immediately after the last puff of a cigarette (63)	form of loose leaves and is encapsulated in a porous pouch. Both products are spit out after use	
Dissolvable products	The total amount of nicotine content in these products ranges from 3.90 to 4.09 mg (64)	Per piece, these products can deliver a range of 0.6–3.1 mg of nicotine (65)	These products are provided in candy-like shapes and sizes that melt away in the mouth, which includes lozenges, orbs, pellets, strips, or sticks, where the juices are swallowed and often have a sweet or minty flavor	Ariva, Stonewall, Camel (62)

Medication algorithm considerations. Patient preference and past experience with quit attempts should be considered, including an assessment for incorrectly using the medication (e.g., chewing NRT gum versus the “chew-and-park” technique) and failed attempts at monotherapy. Medical comorbidities, severity of tobacco use disorder and withdrawal from tobacco use, breakthrough cravings, and weight gain concerns can influence choices. Often the initial choice is between monotherapy (any of the seven FDA-approved medications) or combination therapy, particularly for those with more severe tobacco use disorder or for those who failed monotherapy. Common starting choices are an NRT patch with supplemental NRT short-acting medications (i.e., gum, lozenge, spray, or inhaler) or monotherapy with varenicline.

NRT. NRT reduces physical withdrawal from nicotine without the immediate reinforcing effect of rapidly absorbed nicotine in tobacco smoke. There is variability in the duration of time that patients continue to use NRT; in some cases, past smokers can continue to safely use NRT for prolonged periods. Most NRTs should be used with caution in cardiovascular patients (2 weeks after myocardial infarction, serious arrhythmias, or unstable angina). Patients using the gum, lozenge, or inhaler should be aware that these medications are absorbed in the mouth, and these patients should minimize consumption of acidic beverages (coffee, juice, or soda) 15 minutes before and during use.

The patch provides long-acting administration of nicotine and should be applied at the start of each day in a relatively hairless location, typically between the neck and waist. The 21-mg patch is the most common starting dose (Table 3), and heavy smoking (≥ 25 cigarettes per day) or CO monitor scores >25 ppm suggest considering supplemental short-

acting NRT. Lower starting doses of 7 mg and 14 mg may be appropriate for lighter smokers (10–15 cigarettes per day); however, lighter smokers can still have higher CO monitor scores because of compensatory smoking. Side effects include local skin reactions (minimized with creams and by rotation of patch sites) and insomnia or vivid dreams (minimized by removing the patch before bedtime).

Nicotine gum (2 or 4 mg) may be used alone or in combination with other NRT medications. The 2-mg dose is recommended for those smoking <25 cigarettes per day; however, some individuals prefer the 4-mg dose. Patients benefit from instruction on the correct usage of gum: “chew” the gum a few times until a peppery or tingly flavor emerges, and then “park” the gum between the cheek and gum until the tingle dissipates. This will help maximize nicotine absorption (for approximately 30 minutes). Chewing nicotine gum like regular gum results in the nicotine entering the stomach, irritating the gastrointestinal tract, and not being properly absorbed. The nicotine lozenge is easier to take consistently and will achieve 25% higher blood levels (allow to dissolve; do not chew) (73). Patients who smoke their first cigarette within 30 minutes of awakening should use the 4-mg lozenge, whereas others might consider the 2-mg dose.

The nicotine inhaler (available by prescription in the United States) is not inhaled in the lungs, is intended for oral mucosal absorption like the gum and lozenge, and provides the smoker with the hand-to-mouth routine of smoking. This inhaler is not like the e-cigarette, which delivers nicotine into the lungs. Dosing is provided in Table 3; patients should use at least six cartridges per day with frequent puffing of the inhaler. Of the NRT products available, nicotine nasal spray (available by prescription in the United

BOX 2. DSM-5 Criteria for Tobacco Use Disorder^a

A. A problematic pattern of tobacco use leading to clinically significant impairment or distress, as manifested by at least two of the following, occurring within a 12-month period:

1. Tobacco is often taken in larger amounts or during a longer period than was intended.
2. There is a persistent desire or unsuccessful efforts to cut down or control tobacco use.
3. A great deal of time is spent in activities necessary to obtain or use tobacco.
4. Craving, or a strong desire or urge to use tobacco.
5. Recurrent tobacco use resulting in a failure to fulfill major role obligations at work, school, or home (e.g., interference with work).
6. Continued tobacco use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of tobacco (e.g., arguments with others about tobacco use).
7. Important social, occupational, or recreational activities are given up or reduced because of tobacco use.
8. Recurrent tobacco use in situations in which it is physically hazardous (e.g., smoking in bed).
9. Tobacco use is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by tobacco.
10. Tolerance, as defined by either of the following:
 - a. A need for markedly increased amounts of tobacco to achieve the desired effect.
 - b. A markedly diminished effect with continued use of the same amount of tobacco.
11. Withdrawal, as manifested by either of the following:
 - a. The characteristic withdrawal syndrome for tobacco (refer to Criteria A and B of the criteria set for tobacco withdrawal).
 - b. Tobacco (or a closely related substance, such as nicotine) is taken to relieve or avoid withdrawal symptoms.

Specify if:

- **In early remission:** After full criteria for tobacco use disorder were previously met, none of the criteria for tobacco use disorder have been met for at least 3 months but for less than 12 months (with the exception that Criterion A4, "Craving, or a strong desire or urge to use tobacco," may be met).
- **In sustained remission:** After full criteria for tobacco use disorder were previously met, none of the criteria for tobacco use disorder have been met at any time during a period of 12 months or longer (with the exception that Criterion A4, "Craving, or a strong desire or urge to use tobacco," may be met).

Specify if:

- **On maintenance therapy:** The individual is taking a long-term maintenance medication, such as nicotine replacement medication, and no criteria for tobacco use disorder have been met for that class of medication (except tolerance to, or withdrawal from, the nicotine replacement medication).
- **In a controlled environment:** This additional specifier is used if the individual is in an environment where access to tobacco is restricted.
- **Coding based on current severity:** Note for ICD-10-CM codes: If a tobacco withdrawal or tobacco-induced sleep disorder is also present, do not use the codes below for tobacco use disorder. Instead, the comorbid tobacco use disorder is indicated in the fourth character of the tobacco-induced disorder code (see the coding note for tobacco withdrawal or tobacco-induced sleep disorder). For example, if there is comorbid tobacco-induced sleep disorder and tobacco use disorder, only the tobacco-induced sleep disorder code is given, with the fourth character indicating whether the comorbid tobacco use disorder is moderate or severe: F17.208 for moderate or severe tobacco use disorder with tobacco-induced sleep disorder. It is not permissible to code a comorbid mild tobacco use disorder with a tobacco-induced sleep disorder.

Specify current severity:

- 305.1 (Z72.0) **Mild:** presence of 2–3 symptoms.
- 305.1 (F17.200) **Moderate:** presence of 4–5 symptoms.
- 305.1 (F17.200) **Severe:** presence of 6 or more symptoms.

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States) provides the fastest absorption and has the highest potential for dependence.

Bupropion. Bupropion can help decrease cravings and withdrawal symptoms and is not associated with weight gain. Patients may prefer a non-nicotine medication. Contraindications include seizure disorder, current or past bulimia or anorexia nervosa, and recent or concurrent use of monoamine oxidase inhibitors or other bupropion use. More common side effects are insomnia and dry mouth. There is a black box

warning for neuropsychiatric side effects. This medication can be started 1–2 weeks before a quit date and is often used for up to 6 months after quitting (Table 3).

Varenicline. Varenicline is a partial agonist at the $\alpha 4\beta 2$ neuronal nicotinic acetylcholine receptor, and it reduces symptoms of nicotine withdrawal and blocks the dopaminergic stimulation responsible for reinforcement and reward associated with smoking. The FDA (74) previously issued black box warnings for cardiovascular adverse events ("a small,

BOX 3. Carbon Monoxide Meter Procedure and Interpretation**Simple Procedure**

- Explain why you are doing the carbon monoxide (CO) meter tests: this is a fast and noninvasive way to determine CO levels and estimate blood carboxyhemoglobin.
- Prepare the patient for what will happen: the patient will need to take a deep breath and hold it for 15 seconds and then blow into a small tube connected to the CO meter.
- Perform the procedure and interpret the results, using the provided charts.

Interpreting the CO Monitor Score in Parts per Million

- Explain how CO enters the blood from smoking and becomes attached to the hemoglobin and prevents oxygen from attaching and being delivered to the body, including the brain.
- Review the specific CO monitor score (in parts per million) and how that relates not only to the number of cigarettes smoked but also to how efficiently he or she smokes.
- A range of 0–6 ppm indicates a nonsmoker. This is the best zone in which to be. Some exposure to secondhand smoke or environmental CO is possible. Some exposure to marijuana smoke is possible. Many people have a small amount of CO in their breath because of the air quality around them.
- A range of 7–10 ppm is a danger zone. This is a high result for a nontobacco smoker. The patient could be a low-frequency smoker or a marijuana smoker.
- A range of 11–15 ppm indicates a smoker. A higher number could mean that the individual is a menthol smoker. This range is a good indicator of addiction.
- A range of 16–25 ppm indicates a heavy addiction to nicotine. Levels are five times that of nonsmokers.
- A range of 26–35 ppm indicates an even heavier addiction to smoking. This individual has a greater chance of getting the flu, headaches, and colds. This individual could be smoking >1 pack per day.
- A range of 36–50 ppm shows a degree of CO poisoning. This level could include cannabis smokers (5). This level of exposure could also be the result of CO poisoning from other environmental sources, independent of smoking, such as a faulty home heating system, motor vehicles, or other combustion engines.
- A range of 51–60 ppm is uncommon and indicates a dangerous addiction. This level could be seen in people who are always noted to be smoking.
- This information is adapted from covita.net/pdfs/Smokerlyzer_Interpretation_Chart.pdf and www.camquit.nhs.uk/uploads/Carbon%20Monoxide%20Chart.pdf; both of these PDFs are excellent resources for clinical practice.

Further Interpretation of the CO Score

- Describe how CO in the body affects patients' physical abilities now, specifically their brain (can feel like the flu with headache, fatigue, dizziness, etc.), heart (rapid heart rate), and lungs (feel weak or short of breath with exertion).
- The CO score correlates with serum carboxyhemoglobin and reflects the percentage of oxygen that is replaced by CO. The CO monitor shows both scores.

Three Manufacturers of CO Meters

- Bedfont Scientific Ltd. (www.bedfont.com)
- Breathe E-Z Systems, Inc. (www.testbreath.com/index.asp)
- MicroCO breath CO monitor (mdspiro.com/microco)

increased risk of certain cardiovascular adverse events in people who have cardiovascular disease”) as well as for neuropsychiatric adverse events such as depressed mood, agitation, changes in behavior, suicidal ideation, and suicide. More recent research on varenicline in psychiatric patients showed that psychiatric symptoms were not worsened (75), and there was no evidence of an increased suicide risk (76). Of note, the black box warning was issued in 2011 (77), and a 2014 FDA review (78) did not support the original warning. Clinicians should counsel patients on these two black box FDA warnings and monitor for symptoms related to mental status and cardiac status.

Combination medications. The seven FDA medications can be used in combination, especially in individuals with more severe tobacco use disorder, higher CO scores, and difficulty

during withdrawal. Combination examples include a nicotine patch plus short-acting NRT, bupropion and NRT, varenicline and bupropion, or varenicline and NRT. Patients may elect not to use combination medications because of side effects or cost (79).

Effect of Tobacco Use and Cessation on Psychiatric Medications

Smoking tobacco affects the blood levels and dosing of many psychiatric medications. Tobacco smoke metabolism (not the nicotine) induces the liver cytochrome P450 (CYP1A2), which also results in the increased metabolism of psychiatric and other medications (and caffeine) that are metabolized through the CYP1A2 isoenzyme. Faster metabolism means lower blood levels (by 40% for some medications), requiring higher dosing of medications for patients when they are active

BOX 4. Free Smoking Cessation Community Resources Internet Resources and Live-Chat Support

- American Cancer Society (www.cancer.org)
- American College of Obstetricians and Gynecologists (www.acog.org/-/media/For-Patients/faq065.pdf)
- American Lung Association (www.lung.org)
- Centers for Disease Control and Prevention (www.cdc.gov/tobacco)
- Department of Health and Human Services (betobaccofree.hhs.gov)
- Make Smoking History (www.makesmokinghistory.org)
- National Cancer Institute LiveHelp Online Chat (livehelp.cancer.gov)
- Nicotine Anonymous (www.nicotine-anonymous.org)
- Quit Net (www.quitnet.com)

Quitlines

- Department of Veterans Affairs Quitline (1-855-QUIT-VET [1-855-784-8838])
- National Network of Tobacco Cessation Quitlines (1-800-QUIT-NOW)

Mobile Apps

- Become an Ex (www.becomeanex.com)
- My Quit Coach (www.livestrong.com/quit-smoking-app/)
- Smokefree Teen (teen.smokefree.gov/sftapps.aspx)
- SmokefreeTXT (www.smokefree.gov/smokefreetxt/)
- Smokefree Women (women.smokefree.gov/sfwapps)
- Text2Quit (www.text2quit.com)

Additional Local Resources in Your Area

- Contact your employee assistance program. They may offer free help.
- Contact your insurance company to ask for help. Some assistance may be free or partially reimbursable, including counseling and nicotine replacement therapy medications.
- Nicotine Anonymous (www.nicotine-anonymous.org)

smokers. Commonly prescribed psychiatric medications metabolized through this pathway include antipsychotics (clozapine, olanzapine, haloperidol, and fluphenazine), antidepressants (amitriptyline, nortriptyline, imipramine, clomipramine, fluvoxamine, and trazodone), benzodiazepines, caffeine, and other over-the-counter and prescribed medications (80). When patients quit smoking, their CYP1A2 metabolism slows down, the medication blood levels increase, and side effects may emerge. The clinician needs to watch for side effects and consider lowering the medication dose. When patients relapse to smoking, their medication blood levels can be reduced and psychiatric symptoms may reemerge. The potential for decreasing psychiatric medication doses can motivate patients to quit smoking. Caffeine plasma levels can double with smoking cessation, and patients should be advised to decrease their caffeine intake by 50% to reduce the likelihood of caffeine “intoxication,” which will feel like severe nicotine withdrawal and may include symptoms such as agitation and restlessness (81).

EFFECT OF TOBACCO ABSTINENCE ON MENTAL ILLNESS AND ADDICTION RECOVERY

Stopping tobacco use has many benefits that support recovery, including reducing physical illness, lengthening the lifespan, and improving mental health and quality of life. As noted above, Taylor et al. (23) conducted a systematic review of 26 studies and found that mental health improves after cessation of tobacco use; these benefits included a significant decrease in stress, depression, and anxiety symptoms as well as overall improvement in quality of life. In addition, there are many other benefits such as more discretionary income, less discrimination, and more options for relationships and employment. One study of smokers with schizophrenia found that approximately 27% of their median income was spent on cigarettes and that quitting was a great financial motivator (82). Quitting can also reduce discrimination and stigma (16, 83).

Contrary to beliefs that treating tobacco use disorder worsens outcomes, smokers with mental illness or addictive disorders who undergo treatment for tobacco use disorder do not have worsening of clinical symptoms of unipolar depression, bipolar disorder, posttraumatic stress disorder, or schizophrenia (24, 84). Furthermore, treatment of tobacco dependence is associated with a decreased likelihood of rehospitalization, and a meta-analysis showed that treatment for addictive disorders was associated with an increased likelihood of sobriety among smokers (85). Smokers with mental illness have higher levels of nicotine even when they smoke the same amount of cigarettes as smokers without mental illness, and they are likely to have worse tobacco withdrawal than smokers without mental illness (86).

COSTS OF TREATMENT AND MEDICATIONS FOR TOBACCO USE DISORDERS

Similar to other substance use disorders, tobacco use disorders can be integrated into the routine services provided by psychiatrists. In some cases, the CO meter procedure can be reimbursed. Pharmacy benefits vary by plan but might include some medications for this disorder. The three over-the-counter medications for tobacco use disorder are relatively affordable and available. Several states cover treatment services and medications through Medicare, Medicaid, or state agency funding. All patients can access free quitline coaching and support (Box 4).

QUESTIONS AND CONTROVERSIES

Self-Medication or Tobacco Withdrawal?

Clinicians and patients may attribute and rationalize ongoing tobacco use as a form of self-medication of the underlying psychiatric disorder versus the more logical self-medication of tobacco withdrawal. When someone stops using tobacco products, he or she begins to experience acute tobacco/nicotine withdrawal. There is increased craving, which can lead to a return to use, in addition to many other withdrawal

TABLE 3. Seven FDA-Approved Medications for Tobacco Use Disorders: Five Nicotine Replacement Therapies (Nicotine Agonists) and Two Non-Nicotine Agonists (Bupropion and Varenicline)^a

Product	Initial Prescription	Patient Education Issues	Precautions	Side Effects	Approximate Costs
Nicotine patch (OTC)	Apply 21-mg patch for 4–6 weeks; taper to mid-dose (14 mg) for an additional 2–4 weeks and can use lower dose (7 mg) for another 2 weeks; start at lower dose for lighter smokers	Apply each day to clean, dry, hairless skin, using tape if needed; rotate patch site daily to minimize skin irritation	Caution against using within 2–6 weeks of myocardial infarction or with arrhythmias	Skin reaction/rash (50% of patients), usually mild, treat with 1% hydrocortisone cream or 0.05% triamcinolone cream); vivid dreams or sleep disturbances can occur if worn overnight	\$45 per 2-week supply (generics available and effective); \$3 per day
Nicotine gum (OTC)	2 mg; 4 mg dose if smoking ≥ 25 cpd); chew every 1–2 hours as needed; usual range is 9–16 pieces per day	"Chew and park"; avoid coffee and other acidic beverages 15 minutes before/ during use	Dentures	Jaw pain, hiccups, mouth irritation; nausea if swallowing saliva	\$50 per 2-week supply; (generics available and effective); \$3 per day
Nicotine lozenge (OTC)	2 mg; 4 mg (if smoke within 30 minutes of waking); dissolve (do not chew) in mouth; use 9–20 per day for 6 weeks, then taper over 6–12 weeks	Avoid food, coffee, and acidic drinks 15 minutes before/ during use	N/A	Hiccups, nausea, heartburn	\$43 for 72 lozenges (\$0.60 per lozenge); approximately \$6 per day, average
Nicotine inhaler	Puff as needed; use up to 16 cartridges per day; cartridge has 4 mg of nicotine over 80 inhalations; less may be needed if using combination therapy	Avoid food, coffee, and acidic drinks 15 minutes before/ during use; orally absorbed; no need to inhale deeply	Do not use with severe reactive airway disease	Cough, throat irritation (40%) in first 2 days, usually mild and reduces at 3 weeks	\$150 per 168 cartridges (approximately \$1 per cartridge); prescription is for 168 cartridges (1-month supply)
Nicotine nasal spray	One dose is 2 sprays (1 in each nostril); maximum 5 doses per hour; maximum 40 doses per day; use 3–6 months	Spray into nose away from nasal septum with head tilted back; do not sniff	Caution with asthma, rhinitis, sinusitis, nasal polyps	Nasal irritation (80%–90%); possible dependence	\$45 per bottle; cost per day varies with use (approximately \$5 per day, average)
Bupropion SR (Zyban)	150 mg each morning for 3–7 days, then 150 mg b.i.d., at least 8 hours apart	Start 1–2 weeks before quit date; take second pill in early evening to reduce insomnia	Do not use with seizure disorders, current use of bupropion or MAOIs, electrolyte abnormalities, or eating disorders; monitor blood pressure	Insomnia (40%), dry mouth, headache, anxiety, rash; reduced side effects with 150 mg/day	\$90 for 1-month supply; \$3 per day; generic forms less expensive
Varenicline (Chantix)	"Starter" pack and then "continuation" packs: days 1–3, 0.5 mg every morning; days 4–7, 0.5 mg b.i.d.; weeks 2–12, 1 mg b.i.d.; duration, 12 weeks to 6 months	Quit smoking when starting 1-mg dose; take with full glass of water and after eating	Adjust dosage for renal impairment; black box warnings for neuropsychiatric symptoms (depressed mood, agitation, behavior changes, suicidal ideation or suicide) and cardiovascular adverse events in people with cardiovascular disease	Nausea (take with food); trouble sleeping, abnormal dreams (take second dose earlier in the evening); may also affect the ability to drive or operate heavy machinery	\$120 for maintenance dose (\$8 per day for 2 tablets)

^a Please consult the *Physicians' Desk Reference* for details. cpd, cigarettes per day; MAOI, monoamine oxidase inhibitor; N/A, nonapplicable; OTC, over the counter; SR, sustained release.

symptoms that are bothersome, including anxiety, poor concentration, moodiness, and irritability. Recurrent tobacco use is a self-medication for treating nicotine withdrawal symptoms, and these recurrent relapses are a symptom of addiction and the brain's need for reinforcement. Because psychiatric patients often achieve higher blood levels of nicotine relative to the number of cigarettes they smoke (87), the higher nicotine levels may result in a worse acute nicotine withdrawal (88, 89). These relapses do not mean that individuals "need" tobacco to manage their psychiatric illness; rather, they relapse to manage their worse acute nicotine withdrawal owing to more severe tobacco use disorder and perhaps underlying cognitive and biological differences. As a final comment, any medication used to treat a problem must be evaluated on risks and benefits. Cocaine use might appear to improve mood in the short term; however, cocaine has obvious health consequences, it can become addictive, and there are better alternatives to treating mood problems. Similarly, the risks for ongoing tobacco use are enormous, and if tobacco were a psychiatric medication, its side effect profile would remove it from the market. The self-medication hypothesis leads to minimization and denial of the serious health and other consequences for psychiatric patients. As noted previously, the review by Taylor et al. (23) suggests that people who abstain after they experience acute withdrawal have less stress and less severe depression and anxiety symptoms, which provides further evidence against the theory of self-medication for mental health.

Individual Rights to Smoke Versus Group Rights for Tobacco-Free Campuses?

There is a nationwide movement to render public buildings and spaces tobacco free. Apartment complexes in the general population have become tobacco-free buildings and campuses. In 1993, the Joint Commission on Accreditation of Healthcare Organizations banned smoking in hospitals. However, the issue of an individual's right to smoke or use other forms of tobacco continues to be raised in mental health and addiction treatment settings, providing a smokescreen to slow down the process of culture change to parallel what is occurring in the general population in both public and private (jointly owned or used) spaces. As with other public health issues, nonsmokers' rights to tobacco-free areas supersede individuals' rights to smoke. There is clear evidence of the risks for secondhand smoke (40,000 deaths per year) and for tobacco use to be a sensory cue that triggers craving and relapse. Alcohol (another legal substance) is not permitted on addiction treatment campuses, reflecting a philosophy that recognizes the need for a culture of recovery and not having alcohol use be a trigger for relapse. The journal *Tobacco Control* has devoted an issue to this topic, and the issue frames tobacco-control initiatives, such as tobacco-free campuses and settings, within an ethical context (90).

The Tobacco Industry and Mental Illness

People with mental illness have long been targeted by the tobacco industry. In a 2008 article in the *Schizophrenia*

Bulletin, Prochaska et al. (91) revealed how the tobacco industry orchestrated targeting people with mental illness. According to the study, in the 1950s, the tobacco industry became interested in people with schizophrenia, studying "self-medication" hypotheses, patterns of disease development, and nicotinic receptors in order to capitalize on this vulnerable population. Advertising has also been aimed at people with psychiatric illness (e.g., an advertisement headline reads "Schizophrenic. For New Merit, having two sides is just normal behavior."). Documents show that the tobacco industry was supplying free, low-cost, or tax-free cigarettes to psychiatric institutions. Even as recently as the 1990s, mental health centers were still communicating with companies like R.J. Reynolds for cigarette donations. Tobacco companies lobbied for smoking areas in psychiatric facilities after the Joint Commission mandated smoke-free hospitals (91).

Multiple NRT Use and Use While Smoking

In April 2013, the FDA updated guidelines on NRTs. On the basis of clinical experience over many years, the FDA approved two major packaging changes. First, the agency removed warnings to not use NRTs while still smoking. Second, the FDA noted that there are no safety concerns when using more than one NRT and for a longer period. The FDA does note that patients should still choose a quit date to start NRT even if they are not able to quit that day. The practice of using more than one medication has been in use for many years and may increase success rates (4).

E-Cigarettes and Emerging Tobacco Products: New Dangerous Products or Less Harmful and Helpful?

E-cigarettes and other emerging products are being promoted as less harmful substitutes for cigarettes and even as treatments that are helpful for detoxification. There is no evidence to support these claims, as noted by the FDA. The FDA currently includes all smokeless products under the same federal tobacco regulations restricting sales, accessibility, and advertising to minors. These products include cigarettes, cigarette tobacco, and roll-your-own tobacco. A proposal to extend this rule to e-cigarettes, cigars, pipe tobacco, and water pipes has been issued and is currently pending (92). While recognizing the research gap concerning the health effects and safety of e-cigarettes, the World Health Organization has reported the need for global regulations that address the following: advertising of these products to both nonsmokers and youth, curtailing conceivable adverse health effects of these devices for both users and nonusers, banning unsupported statements about e-cigarettes, and preserving existing tobacco-control efforts (93). There is also emerging scientific literature surrounding a possible increased risk for nicotine dependence among nonsmokers and reinforced dependence among current smokers who consume these products (94, 95). Increased exposure to nicotine associated with polytobacco may additionally pose greater difficulty in achieving successful cessation (94, 96). From a public health perspective,

further investigation is needed to guide appropriate policy development and FDA regulations, including evaluating the risks and the prevalence of use of the different products (94).

RECOMMENDATIONS

Summary recommendations are provided below for psychiatrists' consideration of how they can make an important impact on the lives of their patients, including their general health and their mental health. In many cases, the psychiatrist has the key relationship with the patient; through this therapeutic alliance, the psychiatrist can offer choices and help initiate the treatment process. Tobacco use disorders are very common and are often neglected in clinical practice, although this disorder is a *DSM-5* substance use disorder and psychiatrists have the tools to treat it. The following five clinical recommendations are achievable, simple, and oriented toward recovery and wellness:

1. Every psychiatric patient should be screened for current or past tobacco use, and users should receive at least 2 minutes of further assessment and engagement. The psychiatrist should provide the patient with clear advice to quit as well as reasons relevant for quitting. The patient should be engaged in a shared decision-making conversation on treatment options with the psychiatrist and/or a referral for additional information or help.
2. Every patient who uses or recently used tobacco should have "tobacco use/tobacco use disorder" listed in the problem list and in the treatment plan, with a clear summary of the pattern of use, motivational level to change, and plan for next steps. The treatment plan should be motivation-based and specific, accounting for the level of care and the treatment setting.
3. Every patient should be offered some form of treatment information and options that may vary by motivational level. For example, a patient at an inpatient unit on a campus that is smoke free might receive short-term abstinence maintenance treatment while an inpatient. For an individual with lower motivation, the psychiatrist might provide support and information on resources for quitting as well as discuss pros and cons of ongoing tobacco use.
4. The clinician should consider purchasing a CO meter to help motivate patients and assess ongoing progress. The CO meter produces rapid results, may be reimbursed by third-party payers, and would be an outstanding investment for an accountable care organization or group practice.
5. Every psychiatrist should be familiar with free community resources (quitline, web sites/apps, and Nicotine Anonymous). These resources represent three different ways to connect (phone, Internet, and in person) and they represent clinical orientations (coaching, 12-step/spiritual, cognitive-behavioral, and educational) that are available individually or with a recovery support group.

Psychiatrist-leaders have an opportunity to influence their practices and organizations to create needed system changes to integrate evidence-based practices, to change the treatment culture to be wellness oriented and promote integrated care, and to ultimately enhance their patients' quality of life and length of life. Recommendations for system change are as follows:

1. Modify existing electronic health record/patient chart templates to include tobacco use in screening, assessment, and problem lists. This can help clearly identify tobacco users and serve as a reminder for initial and follow-up conversations.
2. Have the system purchase a CO meter(s) and integrate the tool into initial assessments, motivational interventions, health fairs, and ongoing assessments in treatment.
3. Begin to integrate specific psychosocial treatment options for tobacco use disorder, specifically addressing both lower- and higher-motivated patients. These options can either be stand-alone (Learning About Healthy Living groups, quitters groups, etc.) or integrated into conversations about tobacco use disorder and treatment options in other existing psychosocial interventions at the agency. Integrate tobacco use disorder in wellness, mindfulness, relapse prevention, and almost any other psychosocial treatment.
4. Create or obtain a brochure that describes local tobacco use disorder treatment and education referral options, including the quitline, Internet/app sites, and Nicotine Anonymous. The University of Massachusetts web site provides an example of this type of brochure used in Worcester County, Massachusetts (www.umassmed.edu/PageFiles/28953/Smoking%20Cessation%20Resource%20Guide%202013.pdf). Brochures and posters in patient waiting areas also can be helpful resources.
5. Commit to continuing medical education on this topic for oneself and agency staff. There are many continuing medical education online training options for free and even one Performance in Practice for Maintenance of Certification. For example, RxforChange (rxforchange.ucsf.edu) is a free resource for training mental health care professionals on treating tobacco use, and APA often offers webinars on treatment for tobacco use disorder.
6. Finally, advocating for a tobacco-free campus is a clear sign of culture change and commitment to reducing tobacco use and the consequences from primary or secondary smoke exposure. In addition, eliminating tobacco usage on campus helps reduce triggers to use among individuals who are trying to quit. This change may also challenge some staff members who are tobacco users themselves, for whom recovery services also should be available.

AUTHOR AND ARTICLE INFORMATION

Douglas Ziedonis, M.D., M.P.H., and Makenzie Tonelli, B.A., Department of Psychiatry, University of Massachusetts Medical School, Worcester

Smita Das, M.D., Ph.D., M.P.H., Department of Psychiatry and Behavioral Sciences, Stanford University School of Medicine, Stanford, CA

Address correspondence to Douglas Ziedonis, M.D., M.P.H., Department of Psychiatry, Room S7-866, University of Massachusetts Memorial Medical Center, University of Massachusetts Medical School, 55 Lake Avenue North, Worcester, MA 01655; e-mail: douglas.ziedonis@umassmemorial.org

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