

REPORT 8 OF THE COUNCIL ON SCIENCE AND PUBLIC HEALTH (A-08)  
Substance Use and Substance Use Disorders  
(Reference Committee D)

EXECUTIVE SUMMARY

Objective: To review the current terminology and clinical definitions relevant to substance use, the epidemiology of substance-use disorders and their public health impact, and the neurobiology of addiction; and to provide a general overview of the evaluation and treatment of patients with substance use disorders and of efforts directed to preventing substance use in youth.

Methods: English-language reports on studies using human subjects were selected from a MEDLINE search of the literature from 1995 to March 2008 using the terms “addiction,” “substance” and/or “drug” in combination with “use,” “abuse,” “dependence,” “disorder,” “epidemiology,” and “treatment.” Additional articles were identified by manual review of the references cited in these publications. Web sites of the National Institute on Drug Abuse, National Institute on Alcohol Abuse and Alcoholism, Substance Abuse and Mental Health Services Administration, Centers for Disease Control and Prevention, American Society of Addiction Medicine, American Academy of Child and Adolescent Psychiatry, American Academy of Pediatrics, American Academy of Family Physicians, and the American College of Physicians were searched for relevant publications.

Results: Although some overall trends are encouraging, millions of Americans engage in patterns of substance use that are harmful, and a substantial proportion meet diagnostic criteria for substance use disorders. Substance use is a leading cause of morbidity and mortality. Addiction is now recognized as a chronic disease, attributable in part to long-term changes in the patterns of neuronal activity and connections. Effective prevention and treatment interventions are available, but many who need treatment never receive it.

Conclusion: Substance use disorders are common in the United States, affecting a disproportionate share of adolescents and young adults. More attention needs to be devoted to both screening for alcohol and drug use, and to treatment for substance use disorders, including office-based brief interventions with behavioral components, and/or referral for appropriate treatment of substance use disorders. Future research efforts should focus on implementation strategies to facilitate adoption of these practices into routine health care.

## REPORT OF THE COUNCIL ON SCIENCE AND PUBLIC HEALTH

CSAPH Report 8-A-08

Subject: Substance Use and Substance Use Disorders

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Referred to: Reference Committee D  
(Robert T. M. Phillips, MD, PhD, Chair)

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Introduction

Resolution 421, introduced by the Texas Delegation and adopted by the House of Delegates at the 2007 American Medical Association (AMA) Annual Meeting, asked that our AMA study ways in which it can be supportive in communicating the fact that substance use disorder is: (1) a potentially lethal but treatable disease; and (2) one that may be preventable with early education and intervention. The resolution further asked that such efforts be directed at youth to help them understand these diseases and their treatments and to stave off peer pressure to experiment with potentially addictive substances.

To provide some clarity, and to substantiate the need to better address substance use disorders, this report focuses on the current terminology and clinical definitions relevant to substance use, the epidemiology of substance-use disorders and their public health impact, and the neurobiology of addiction. A general overview is provided, but a detailed discussion about the evaluation and treatment of patients with substance use disorders, or efforts directed to preventing substance use in youth, is beyond the scope of this report. The recommendations address, in part, the need for our AMA to continue activities and/or partnerships designed to reduce the public health impact of substance use disorders.

Methods

English-language reports on studies using human subjects were selected from a MEDLINE search of the literature from 1995 to March 2008 using the terms “addiction,” “substance” and/or “drug” in combination with “use,” “abuse,” “dependence,” “disorder,” “epidemiology,” and “treatment.” Additional articles were identified by manual review of the references cited in these publications. Web sites of the National Institute on Drug Abuse, National Institute on Alcohol Abuse and Alcoholism, Substance Abuse and Mental Health Services Administration, Centers for Disease Control and Prevention, American Society of Addiction Medicine, American Academy of Child and Adolescent Psychiatry, American Academy of Pediatrics, American Academy of Family Physicians, and the American College of Physicians were searched for relevant publications.

The Public Health Impact of Substance Use

Virtually every physician encounters patients or family members affected by substance-related conditions. A number of national studies and published reports indicate that substance use, including the nonmedical use of controlled substances, is a continuing concern and represents a significant public health problem, particularly among teens and young adults. Nonmedical use is

1 defined as the use of prescription medications without a prescription, or use that is directed  
2 primarily toward the subjective experiences caused by the substance.

3  
4 Prevalence Data. The annual National Survey on Drug Use and Health (NSDUH), sponsored by  
5 the Substance Abuse and Mental Health Services Administration (SAMHSA), is the primary  
6 source of information on the use of illicit drugs, alcohol, and tobacco in the civilian population,  
7 aged 12 years and older, in the United States.<sup>1</sup> According to the 2006 survey, more than 20  
8 million Americans were current (i.e., within the last 30 days) illicit drug users, including 7  
9 million individuals who reported past month nonmedical use of prescription drugs.

10  
11 In 2006, ~73 million Americans aged 12 years or older were current users of a tobacco product.<sup>1</sup>  
12 Among high school youth, current use of cigarettes decreased significantly from the late 1990s to  
13 2003 but rates have since leveled off. Young adults aged 18 to 25 years have the highest rate of  
14 current tobacco use (~44%).<sup>1</sup> This represents a small decrease from the 2002 rate of 45.3%,  
15 although the rate of current use of smokeless tobacco in youths aged 12 to 17 years and young  
16 adult current use of cigars increased during this period. In 2006, the prevalence of current use of  
17 a tobacco product was highest in American Indians or Alaska Natives, and lowest among Asians.

18  
19 With regard to alcohol, underage (illegal) use rates rise from 4% among 12- or 13-year-olds to  
20 52% for those aged 18 to 20 years.<sup>1</sup> Legal adult use rates peak at 69% among 21- to 25-year-olds  
21 and decrease with age, eventually decreasing to ~38% among people aged 65 years and older.  
22 Overall, the alcohol use rate of those 18 years and older is ~65%. Among youth, whites in 2006  
23 were more likely than other racial/ethnic groups to report current use of alcohol, while Asians  
24 were least likely. The recent Surgeon General's *Call to Action to Prevent and Reduce Underage*  
25 *Drinking* provides additional information on the scope of the problem in youth.<sup>2</sup>

26  
27 The National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) conducted  
28 by the National Institute on Alcohol Abuse and Alcoholism (NIAAA) defines high risk drinking  
29 as no more than 4 standard drinks a day for men and no more than 3 a day for women and/or  
30 weekly limits of no more than 14 standard drinks for men and 7 for women (similar to  
31 NSDUH).<sup>3</sup> Nearly 30% of the population over 18 years of age exceeded *either* the daily or  
32 weekly limits for alcohol consumption in 2002, and the prevalence of those exceeding the weekly  
33 limits increased from 9.4% to 10.3% between 1992 and 2002.<sup>3</sup>

34  
35 Binge drinking ( $\geq 5$  drinks on at least one occasion in the past month) affects at least 57 million  
36 individuals annually. Rates of binge drinking episodes among minors peak at 36% (18- to 20-  
37 year-olds), and among adults at 46% (aged 21 to 25 years), decreasing to 18.4% of persons aged  
38 35 years or older.<sup>1,4</sup> Importantly, nearly half of binge-drinking episodes occur among otherwise  
39 moderate (non-heavy) drinkers, and nearly three-quarters of all binge drinkers are otherwise  
40 moderate drinkers.<sup>5</sup> Compared with non-binge drinkers, binge drinkers are 14 times more likely  
41 to drive while impaired by alcohol.

42  
43 Except for the underage illicit use of alcohol and tobacco, marijuana continues to be the most  
44 commonly used illicit drug (14.8 million past month users). Nonmedical use of prescription  
45 drugs is the next most common, followed by cocaine, heroin, hallucinogens, and  
46 methamphetamine. Current illicit drug use varied by race/ethnicity in 2006. Among persons aged  
47 12 years or older, the rate was lowest among Asians (3.6%) and highest (13.7%) among  
48 American Indians or Alaska Natives.

49  
50 Combined data from the 2002-2004 NSDUH surveys indicate that nonmedical use of prescription  
51 pain relievers was second only to marijuana use as the most prevalent drug misuse behavior, with

1 the highest rates occurring in young adults aged 18 to 25 years.<sup>1</sup> Although illicit drug use rates  
 2 declined modestly overall in teens and young adults between 2002 and 2006, the proportion of  
 3 young adults reporting current nonmedical use of prescription drugs in the NSDUH increased  
 4 from 5.4% to 6.4%. Similarly, the 2007 Monitoring the Future survey continued to show  
 5 encouraging trends reflecting overall lower use of illicit drugs and alcohol in America's youth,  
 6 except for the nonmedical use of prescription pain relievers, which maintained an elevated rate of  
 7 use.<sup>6</sup>

8  
 9 Patients Meeting Criteria for Substance Abuse and Dependence. Nearly 5% of the population  
 10 aged 18 years and older met *Diagnostic and Statistical Manual of Mental Disorders (DSM)-IV*  
 11 criteria (see below) for alcohol abuse, and 3.8% met the criteria for alcohol dependence.<sup>a</sup> Highest  
 12 rates were in 18- to 29-year-olds. Among people who had developed alcohol dependence in the  
 13 year prior to the survey and sought treatment, 25% were still dependent, 27% were in partial  
 14 remission, 12% were in remission but drinking at levels that put them at risk for relapse, 18%  
 15 were low risk drinkers, and a comparable number were totally abstinent.<sup>7</sup> However, 75% of this  
 16 population never received treatment. Approximately 36 million cigarette smokers (14.4% of the  
 17 total population) currently meet the criteria for nicotine dependence.

18  
 19 According to NSDUH, an estimated 22.6 million persons (9.2% of the population  $\geq 12$  years of  
 20 age) were classified with substance dependence (excluding nicotine) or substance abuse in 2006  
 21 based on DSM, 4<sup>th</sup> edition, text revision (DSM IV-TR) criteria.<sup>1</sup> Of these, 3.2 million were  
 22 classified with dependence on or abuse of both alcohol and illicit drugs, 3.8 million were  
 23 dependent on or abused illicit drugs but not alcohol, and 15.6 million were dependent on or  
 24 abused alcohol but not illicit drugs.

25  
 26 Emergency Room Visits. The Drug Abuse Warning Network (DAWN) covering 21 metropolitan  
 27 areas (with samples from the rest of the country) receives reports of emergency department (ED)  
 28 episodes related to recent drug use including illegal drugs, prescription and over-the-counter  
 29 (OTC) drugs, dietary supplements, and alcohol in minors or in combination with other drugs in  
 30 adults (data are not collected if alcohol is the only substance involved in patients aged 21 years or  
 31 older).<sup>8</sup> In 2005, 1.45 million ED visits were associated with drug misuse or abuse.

32 Approximately 56% involved an illicit drug; 34% involved alcohol; and 41% involved the  
 33 nonmedical use of prescription drugs, OTC pharmaceuticals, or dietary supplements; the latter  
 34 represented a 21% increase from 2004. ED-related visits increased 33% for stimulants, 24% for  
 35 opioid analgesics, and 19% for benzodiazepines. DAWN data cannot be used to identify whether  
 36 the drugs were obtained from a legitimate prescription, as opposed to other sources.

37  
 38 Treatment Facilities. Additional data on problems with substance use disorders emanate from the  
 39 Treatment Episode Data Set (TEDS) report, which provides information on the demographic and  
 40 substance use characteristics of the annual admissions to treatment for alcohol and drug use  
 41 disorders in facilities that are licensed or certified by the state substance abuse agency.<sup>9</sup> Five  
 42 substances accounted for 95% of all TEDS admissions in 2005: alcohol (39%), opiates (17%),  
 43 marijuana (16%), cocaine (14%), and stimulants (9%; primarily methamphetamine). TEDS  
 44 admissions for primary abuse of opiates other than heroin increased from 1% of all admissions in  
 45 1995 to ~4% in 2005. The proportion of admissions for primary marijuana abuse increased from  
 46 10% in 1995 to 16% in 2005, and for methamphetamine or amphetamine from 4% to 9% between

---

<sup>a</sup>DSM-IV did not use the term "addiction," although many clinicians and educators use "addiction" synonymously with the term "substance dependence." This may change in the forthcoming revision (DSM V).

1 1995 and 2005. Sixty-two percent of TEDS admissions in 2005 entered ambulatory treatment,  
2 21% entered detoxification, and 17% entered residential/rehabilitation treatment.

3  
4 In summary, nearly 1 in 7 Americans meets the criteria for alcohol abuse or dependence during  
5 their lifetime, another 1 in 7 is currently dependent on nicotine, and about half this number meets  
6 the criteria for illicit drug abuse or dependence. A substantial number of other Americans engage  
7 in patterns of substance use that are harmful to themselves and/or others. Overall, these survey  
8 data confirm the current magnitude of substance use and addiction in the United States.

### 9 10 Costs and Comorbidities

11  
12 Substance use disorders seldom occur in isolation. According to the most recent NESARC data,  
13 18% to 20% of the U.S. population with a substance use disorder have a co-occurring  
14 independent anxiety or mood disorder.<sup>3</sup> Among those seeking treatment for a drug-use disorder,  
15 60% had at least one independent mood disorder, 43% at least one independent anxiety disorder,  
16 and 55% a comorbid alcohol use disorder. The risk relationship is reciprocal, with psychiatric  
17 disorders predicting increased risk of substance use and vice versa.<sup>10</sup> Similarly, drug use  
18 disorders are far more common among persons with alcohol use disorders, and alcohol use  
19 disorders are far more common among persons with drug use disorders than among those in the  
20 general population. Individuals with substance use disorders also have an increased prevalence of  
21 chronic medical conditions and are at greater risk for human immunodeficiency virus (HIV) and  
22 other sexually transmitted diseases.

23  
24 Combined, substance use disorders are the leading cause of death and disability in this country.  
25 Annually, the single leading actual cause of death in the United States is tobacco use (435,000  
26 deaths;16.6%), almost always among persons suffering from nicotine addiction; alcohol  
27 consumption is third (85,000; 3.5%) and illicit use of drugs is ninth (17,000; 0.7%).<sup>11</sup> These  
28 substances also are factors in other leading causes of death including infectious diseases  
29 (including HIV, hepatitis B virus, and hepatitis C virus infections), toxic exposures, motor vehicle  
30 crashes, and incidents involving firearms. More persons die in America from alcohol-induced  
31 injuries (trauma) than from alcohol-induced illnesses.

32  
33 Contributors to the economic costs of substance misuse and addiction are health care  
34 expenditures for substance use services and the medical consequences of use, lost earnings due to  
35 impaired job performance, social welfare administrative costs, and increased demands on the  
36 juvenile and criminal justice system, as well as other impacts on society from violence, crime,  
37 and accidents. The attributable costs related to substance use disorders exceed \$500 billion  
38 annually.<sup>12</sup> However, more than 95% of the health care dollars devoted to substance use and  
39 addiction is spent on treatment of the medical consequences of addiction, versus less than 5% on  
40 treatment of addiction itself. Less than one-half of 1% of U.S. health care expenditures goes to  
41 treatment for substance use disorders themselves.

### 42 43 Terminology and Definitions

44  
45 The terminology used in this field continues to cause some confusion. Most drug or alcohol users  
46 do not meet the criteria for substance abuse or dependence. Rather, there are patterns of use that  
47 include “substance use,” “misuse or risky use,” “harmful use” or “abuse,” as well as  
48 “dependence” or “addiction,” each with different implications.

49  
50 Diagnostic Criteria. DSM IV-TR uses an umbrella category “substance-related disorders,” which  
51 is further subdivided into two groups: the substance use disorders (substance dependence and

1 substance abuse), and the substance-induced disorders (i.e., intoxication, withdrawal, other  
2 medical or psychiatric disorders, or health problems attributable to substance use).<sup>13</sup> Descriptive  
3 criteria for substance dependence and abuse (see Appendix) are intended to be applicable across  
4 most classes of substances.

5  
6 Most notably, substance dependence is defined as “a maladaptive pattern of substance use,  
7 leading to clinically significant impairment or distress,” manifested by at least 3 of 7 criteria  
8 within a 12-month period, including: (1) tolerance; (2) withdrawal symptoms; (3) increased  
9 dosage or length of use; (4) persistent desire or unsuccessful efforts to cut down or control use;  
10 (5) inordinate amount of time devoted to substance retrieval, use, or recovery from use; (6)  
11 important activities are affected because of use; and (7) use is continued despite knowledge of  
12 harm.

13  
14 Substance abuse is defined as “a maladaptive pattern of substance use leading to clinically  
15 significant impairment or distress, manifested by at least 1 of 4 criteria within a 12-month period.  
16 These criteria are: (1) recurrent use causing failure to fulfill major role obligations; (2) recurrent  
17 use in hazardous situations; (3) recurrent use causing substance-related legal problems; and (4)  
18 continued use despite persistent or recurrent social or interpersonal problems caused or  
19 exacerbated by the substance.

20  
21 The DSM IV-TR criteria for substance dependence and substance abuse are generally applicable  
22 to alcohol, opioids, sedative-hypnotics/anxiolytics, amphetamine, cocaine, and cannabis. Some  
23 dependence criteria may not apply to hallucinogens, phencyclidine, and inhalants. For nicotine,  
24 dependence, but not abuse, is a diagnostic entity (although, ironically, the International  
25 Classification of Diseases [ICD]-9 code for “tobacco use disorder” falls numerically among the  
26 other forms of “substance abuse”—the 305.xx series--rather than among other forms of  
27 “substance dependence”—the 304.xx series).

28  
29 Accordingly, addiction is one of the substance-use disorders. Addiction is defined as:<sup>14</sup>

30  
31 ...a primary, chronic, neurobiological disease, with genetic, psychosocial, and  
32 environmental factors influencing its development and manifestations. It is characterized  
33 by behaviors that include one or more of the following: impaired control over drug use,  
34 compulsive use, continued use despite harm, and craving.

35  
36 It is now generally accepted that addiction is a brain disease (see below), often progressive, and  
37 with a chronic relapsing/remitting course in which compulsive drug-seeking and drug-taking  
38 behavior persist, even in the face of harmful health, social, and in some cases, legal  
39 consequences.<sup>12</sup> Addiction is distinct from tolerance and physical dependence. That is, tolerance  
40 and physical dependence can develop to substances in the absence of behaviors that constitute  
41 addiction.<sup>15</sup>

42  
43 Still other terms were used in the 2006 Institute of Medicine (IOM) Report entitled “Improving  
44 the Quality of Health Care for Mental and Substance-Use Conditions.” This report discussed the  
45 epidemiology of substance-use “conditions” or “illnesses” and their treatment, documenting  
46 discrepancies between substance use care that is known to be effective, and care that is actually  
47 delivered.<sup>16</sup>

48  
49 With regard to alcohol, various terms associated with patterns of misuse have been used. A 1990  
50 report by the IOM broadened the base by referring to alcohol problems consistent with the  
51 concept that a continuum exists for the pattern of use and potential harms.<sup>17</sup> The NIAAA uses

1 substance dependence or abuse per DSM IV-TR, and at-risk drinking.<sup>3</sup> The limits above which  
2 risks increase are more than 2 drinks daily for men, and more than 1 drink daily for women or  
3 those over 65 years of age. Risky drinkers are those who exceed daily or weekly limits; harmful  
4 drinkers experience harm associated with their alcohol use, but do not meet the DSM IV-TR  
5 criteria for substance abuse or dependence.

6  
7 In concert with the definition of addiction, alcoholism is defined as:<sup>18,19</sup>

8  
9 ...a primary, chronic disease with genetic, psychosocial, and environmental factors  
10 influencing its development and manifestations. The disease is often progressive and  
11 fatal. It is characterized by continuous or periodic: impaired control over drinking,  
12 preoccupation with the drug alcohol, use of alcohol despite adverse consequences, and  
13 distortions in thinking, most notably denial.

#### 14 15 Neuropathological Basis of Addiction

16  
17 Most people who experiment with illicit drugs or alcohol or who are exposed to opioids,  
18 stimulants, or sedative-hypnotics during medical treatment do not develop a substance use  
19 disorder. Addictive substances can induce pleasant states or euphoria in the initiation phase  
20 and/or relieve distress from anxiety, depression, fear, feelings of hopelessness, and so forth.  
21 Continued use of some substances triggers adaptive changes in the central nervous system leading  
22 to tolerance and physical dependence. In some individuals, ongoing substance use gives rise to a  
23 condition in which environmental stimuli (cues) associated with substance use itself induce  
24 conditioned responses (craving; drug-seeking behavior) in the absence of the drug.<sup>20</sup> The  
25 motivational hierarchy of persons with addiction differs from that of persons without addiction or  
26 from that which they manifested prior to the onset of addiction: substance use or procuring drug  
27 supplies takes a salient position as a positive reinforcer, displacing other rewards such as pro-  
28 social reinforcements derivable from work, educational achievement, family, intimate  
29 relationships, recreational pursuits, and community involvement. Relapse and vulnerability to  
30 relapse are key elements to maintaining substance use. Vulnerability to developing a substance  
31 use disorder is based on interplay of the characteristics of the substance; substance availability  
32 and cost; genes; environmental influences; social interactions; developmental history and  
33 experiences;<sup>21</sup> and other host factors, including the presence of other psychiatric disorders.<sup>22-24</sup>

34  
35 Specific neurologic substrates have been identified on the basis of neuroimaging studies in  
36 humans and gene targeting in animals, assisted by the availability of specific receptor agonists  
37 and antagonists.<sup>20</sup> Neuroimaging techniques have measured neural effects as they occur or  
38 following drug exposures, how they change and persist in the brains of individuals with substance  
39 use disorders, and how they remit after periods of abstinence. Substances that are neurotoxic  
40 with chronic use (e.g., alcohol, methamphetamine, cocaine) induce changes that are evident at a  
41 gross structural level.

42  
43 Alcohol and other substances that are misused enhance specific brain neurochemical pathways in  
44 a fashion similar to other natural rewards (e.g., food, sex), only in a more intense and prolonged  
45 manner. Dopamine-containing projections from the ventral tegmental area to the nucleus  
46 accumbens are a key component in brain reward circuitry. Activity in this dopamine pathway  
47 plays a pivotal role in coding reward (and its saliency), predicting reward, and the motivation to  
48 pursue it. The pathway also is involved in priming cortical regions that exert inhibitory control  
49 and executive function (choice), and in conditioned or learned responses.<sup>20</sup> By mimicking the  
50 brain effects of natural rewards that serve biological needs, addictive drugs exert their capacity to  
51 shape behavior.<sup>25</sup>

1 Although the initial activation of this pathway is critical for drugs to reinforce behavior and  
2 promote substance misuse, addiction is associated with long-term changes in brain circuitry in  
3 higher cortical pathways and associative loops. Repeated administration of the substance triggers  
4 (long-term) synaptic changes in higher brain regions and excitatory neuropathways as learned  
5 associations with drug-related events are formed.<sup>26</sup> Ultimately, these changes modify (diminish)  
6 how the brain perceives the value of natural rewards, and dampens the capacity of the prefrontal  
7 cortex to exert cognitive control over drug seeking, while at the same time enhancing  
8 responsiveness to cues and drug-associated stimuli.<sup>20,27</sup> On a behavioral level, the individual  
9 transitions from experiencing the acute drug effects to patterns of recreational use, and then the  
10 pathological states of abuse or addiction. This pattern typically occurs with high frequency and  
11 often with great rapidity among nicotine users. The persistence of addiction is based on the  
12 remodeling of synapses and brain circuits similar to the process of long-term associative memory,  
13 wherein drug-associated environmental stimuli or cues have inordinate power in directing  
14 behavior.<sup>28</sup> The persistence of changes in brain activity of persons with addiction explains the  
15 persistence of behaviors, altered motivational hierarchies, cue responses, and craving, that can  
16 persist for long periods after the cessation of substance use (e.g., for years after a nicotine addict's  
17 last cigarette).<sup>29</sup> These changes have obvious implications for the required course and  
18 effectiveness of treatment in individuals with addiction.

#### 19 20 Treatments Are Effective

21  
22 To be effective, treatment must address the individual's substance use; use behaviors; and any  
23 associated medical, psychiatric, social, vocational, and legal problems.<sup>30</sup> For individuals with  
24 risky use, harmful use, or substance abuse, treatment is directed toward detoxification and/or  
25 resolution of withdrawal symptoms as needed, motivation to change, moderation in use or use  
26 patterns, minimization of problems from use, and harm reduction. For individuals with addiction,  
27 treatment (with abstinence as a goal) is focused on detoxification and resolution of withdrawal  
28 symptoms, fostering behavioral changes to eliminate drug use behaviors, and bolstering personal  
29 responsibility for wellness, in order to decrease the frequency and severity of relapses, increase  
30 the duration of remission, and optimize functioning.<sup>31</sup> To accomplish rehabilitation, cognitive,  
31 affective, and social changes are necessary in addition to behavior change.<sup>30</sup>

32  
33 Organizing care to address concurrent conditions, such as by integrating alcohol and drug  
34 treatment with other medical care, and combining treatment for substance use and mental health  
35 problems also optimizes outcomes.<sup>32,33</sup> Treatment can be hampered by the stigma associated with  
36 substance use as well as by patient variables including impaired self-management capabilities; in  
37 some cases, treatment entry may have been coerced. Additionally, the mode of clinical practice;  
38 features of certain state medical practice acts; the varied composition of the health care workforce  
39 delivering care for patients with substance use disorders; failure to screen, identify, or intervene;  
40 and discriminatory insurance coverage impede the delivery of patient-centered care.

41  
42 Treatment for substance use disorders is delivered in different settings, using a variety of  
43 approaches. Because addiction is a chronic disease, management and recovery from it (restored  
44 functioning and, ideally, sustained abstinence), may, as with other chronic diseases, be a long-  
45 term process requiring repeated treatment interventions.

46

1 Psychosocial interventions typically are delivered as:

- 2
- 3 • Outpatient treatments ranging from primarily education and counseling for individuals
- 4 and families, to programs that also treat comorbid mental health or medical problems, to
- 5 intensive day treatment.
- 6 • Short-term residential programs with inpatient treatment followed by extended outpatient
- 7 therapy, often supplemented by participation in a self-help group.
- 8 • Long-term residential or therapeutic community treatment programs.
- 9

10 In adults, general approaches include cognitive behavioral therapy for relapse prevention,  
 11 supportive-expressive psychotherapy or individualized drug counseling, motivational  
 12 enhancement to encourage treatment acceptance and adherence and discontinue drug use, and  
 13 contingency management.<sup>33,34</sup> Individual, group, and family approaches all have utility. Brief  
 14 advice and office-based counseling interventions (see below) have been used in patients with  
 15 alcohol use disorders and nicotine dependence, but have not been shown to be helpful in other  
 16 substance use disorders. Also effective are 12-step mutual support groups as an adjunct to  
 17 treatment and as a long-term component of sustaining remission. More specialized community-  
 18 based programs exist,<sup>35</sup> including community counseling plus vouchers (positive reinforcement)  
 19 that reward drug-free periods, and day treatment with abstinence contingencies and vouchers.  
 20 Behavior or multidimensional family therapies are particularly useful for adolescents. A clinical  
 21 practice guideline on the assessment and treatment of children and adolescents with substance use  
 22 disorders is available from the American Academy of Child and Adolescent Psychiatry.<sup>36</sup>  
 23 Specific services for affected family members are also offered by many addiction treatment  
 24 agencies.

25  
 26 For patients with substance dependence or addiction, pharmacologic treatments are used  
 27 according to the following paradigms:

- 28
- 29 • To manage withdrawal symptoms and facilitate cessation of substance use.
- 30 • In some cases, agonist replacement therapy is used during the cessation process (e.g., for
- 31 nicotine), or as maintenance treatment (e.g., for opioids) with counseling and needed
- 32 medical, psychological, and social services.
- 33 • To block drug effects that are reinforcing (partial agonists or antagonists working at
- 34 nicotinic or mu-opioid receptors).
- 35 • To diminish cravings and prevent relapse (alcohol, nicotine, opioids; possibly cocaine).
- 36 • To induce aversive responses to assist in promoting abstinence (alcohol; possibly
- 37 cocaine).
- 38

39 Brief Interventions. The essential features of office-based brief interventions are based on the 5  
 40 “A’s”: *ask* about use at every opportunity; *advise* patients to stop; *assess* their willingness to  
 41 stop; *assist* the patient to stop; and *arrange* follow-up care.<sup>37</sup> Brief advice and multi-contact  
 42 office-based counseling interventions by primary care physicians reduce risky and harmful  
 43 alcohol use, and enhance tobacco cessation efforts.<sup>38-40</sup> Very brief or brief single-contact  
 44 interventions are less effective or ineffective in reducing alcohol and nicotine consumption in  
 45 these groups. Data on whether women or youth may be less responsive than adult males to these  
 46 types of interventions for problem drinking are somewhat controversial.<sup>38,39</sup>

47  
 48 Instructive and helpful manuals or guidelines are available for primary care physicians to assist in  
 49 providing effective screening and treatment via brief intervention.<sup>41,42</sup> Toll-free smoking cessation  
 50 “QuitLines” are available for patient assistance in every state.<sup>43</sup> Overall, these types of efforts to

1 reduce alcohol and tobacco use need to be improved.<sup>44</sup> Applied treatments also reduce  
2 consumption and substance use behaviors in individuals affected by opioids, cannabis, and  
3 cocaine who seek treatment.<sup>45</sup>

#### 4 5 Prevention Efforts

6  
7 Most prevention efforts focus on substance use-related issues, and not addiction *per se*. The  
8 National Institute on Drug Abuse (NIDA) has developed a research-based guide for parents,  
9 educators, and community leaders on preventing illicit substance use (other than alcohol) among  
10 children and adolescents.<sup>46</sup> The guide includes several prevention principles addressing risk and  
11 protective factors; prevention planning for family, school, and community programs; and  
12 program delivery. Prevention programs are usually designed to reach target audiences in their  
13 primary setting; they also can be classified based on the audience as *universal* (designed for a  
14 general audience); *selective* (designed for groups at risk), or *indicated* (designed for individuals  
15 already using substances). A number of such evidence-based programs under each classification  
16 have been catalogued by NIDA, and the American Academy of Pediatrics has published a policy  
17 statement on the role of schools in combating illicit substance use.<sup>47,48</sup>

18  
19 The Center for Substance Abuse and Prevention (CSAP) within SAMHSA provides an online  
20 “Prevention Platform” with tools and resources to help organizations undertake assessment  
21 efforts, build capacity by mobilizing resources and via training and education to promote  
22 readiness, and create a comprehensive plan with goals, objectives, and strategies aimed at  
23 meeting the substance abuse prevention needs of the community, implement various components  
24 of the prevention plan, and evaluate the impact of programs and practices.<sup>49</sup> The CSAP has also  
25 designed and implemented several public education programs that range from raising awareness  
26 about the harms of underage drinking to helping families live a healthy, drug-free lifestyle.<sup>50</sup>  
27 Links to a number of other prevention resources are available on the CSAP’s web site. Another  
28 effective national prevention organization is the Community Anti-Drug Coalitions of America.<sup>51</sup>

#### 29 30 AMA Prevention and Other Activities

31  
32 Our AMA has a long-standing commitment to the prevention and treatment of alcohol, tobacco,  
33 and illicit drug use and addiction. In 1956 our Council on Mental Health and its Committee on  
34 Alcoholism recognized alcoholism as a disease that could be treated medically.<sup>52</sup> In 1979 our  
35 AMA adopted a policy statement entitled “Guidelines for Physician Involvement in the Care of  
36 Substance-Abusing Patients.” The guidelines articulated the principle that every physician must  
37 assume clinical responsibility for the diagnosis and referral of patients with substance use  
38 disorders, and broadly defined the competencies required to meet that responsibility. These  
39 activities represented some of the first efforts by a major medical organization to address  
40 addiction as a disease, and to highlight the need for all physicians to have competence in  
41 addressing substance use disorders. Almost 30 years later, the targets set for health education and  
42 health care delivery on substance use disorders have not been substantially approached.

43  
44 The AMA Office of Alcohol, Tobacco and Other Drug Abuse Prevention, located in the Division  
45 of Healthy Lifestyles, raises awareness of alcohol-, tobacco-, and illicit drug abuse-related  
46 problems and solutions among physicians and the general public. The Office serves physicians  
47 and the public as an information source for advocacy, public policy change, leadership, and  
48 education. It also serves as liaison to federal and international drug abuse prevention and  
49 treatment agencies and collaborates in disseminating resources for physicians. It helps physicians  
50 help their patients through the dissemination of screening and brief intervention resources for  
51 management of patient alcohol problems and of smoking cessation resources.

1 Effective prevention of alcohol and tobacco use have been found to involve combinations of  
 2 environmental change strategies consisting of public education and counter-marketing, reduction  
 3 and control of availability and promotion, minimum use and purchase age, increase in cost  
 4 through taxation and other means (e.g., license fees; bans on discounted sales), clean indoor air  
 5 regulations (for smoking), and beverage service training and regulations (for alcohol), supported  
 6 by law enforcement entities. These strategies were applied effectively by our AMA, in  
 7 partnership with the Robert Wood Johnson Foundation, through funding and management of  
 8 three national, state, and local coalition policy advocacy programs:

9  
 10 SmokeLess States (1993-2004; in 41 states);  
 11 Reducing Underage Drinking through Coalitions (1996-2005; in 10 states, District of  
 12 Columbia and Puerto Rico); and  
 13 A Matter of Degree—the National Effort to Reduce Binge Drinking among College  
 14 Students (1996-2007; 10 university-city projects).

15  
 16 Currently, NIDA supports its Primary Care Physician Outreach Project at the AMA to familiarize  
 17 physicians with resources to address patient drug abuse and to research ways to increase  
 18 physician involvement in addressing patient substance use disorders. As part of this effort, NIDA  
 19 has funded 6 Centers of Excellence in Substance Abuse Information through medical education  
 20 development grants to 6 medical school participants in the AMA Ethics Division’s Innovative  
 21 Strategies for the Education of Physicians (iSTEP) initiative. The Environmental Protection  
 22 Agency supports an AMA project, “Developing A System to Educate Low Income Patients  
 23 About Health Risks of Secondhand Smoke,” to increase physicians’ and their staffs’ knowledge  
 24 about secondhand smoke as a major asthma trigger and source of respiratory distress in children  
 25 and adults, and to assist physicians to educate, especially, low income patients about the health  
 26 effects of secondhand smoke exposure and how to reduce their family’s exposure, especially  
 27 through smoking cessation.

28  
 29 Our AMA has also collaborated with the Partnership for a Drug Free America on several of its  
 30 universal programs designed to foster family communication and understanding that harm is  
 31 associated with substance use. Currently, our AMA partners with the Office of National Drug  
 32 Control Policy to reinforce messages designed to minimize the diversion of prescription drugs  
 33 subject to misuse, and with the AMA Alliance in a national collaboration to reduce the depiction  
 34 of smoking in motion pictures.

### 35 36 AMA Policy

37  
 38 Our AMA already recognizes that “drug dependencies, including alcoholism, tobacco  
 39 dependence, and substance abuse” are diseases (Policies H-95.983, H-95.976, and H-30.977,  
 40 AMA Policy Database). Furthermore, AMA policy also recognizes that “drug addiction in any of  
 41 its manifestations,” is a treatable disease (Policy H-30.958) and promotes “medical approaches to  
 42 substance use disorders” (Policy H-95.950).

43  
 44 However, the terminology used throughout AMA policy on what are now generally termed  
 45 substance use disorders is variable. Examples include use of the terms “chemically dependent,”  
 46 “drug abuse,” “substance abuse,” “alcohol and other drug abuse,” “alcoholism and other chemical  
 47 dependencies,” “alcohol use disorders,” and “alcohol dependency.” Certain policies that  
 48 characterize conditions and/or diseases introduce further ambiguity. For example, AMA policy  
 49 on health promotion and disease prevention refers to the “health hazards of tobacco, alcohol,  
 50 accidental injuries, unhealthy lifestyles, and all *forms of preventable illness*” [emphasis added]  
 51 (Policy H-425.993). AMA policy on “substance abuse among physicians” defines physician

1 impairment as any physical, mental, or behavioral *disorder* (Policy H-95.955). Other policies  
2 refer to alcoholism as a *disability* or *chronic illness* (H-30.995; H-30.999).

3  
4 Summary and Conclusion

5  
6 Substance use disorders are common in the United States, affecting a disproportionate share of  
7 adolescents and young adults, and are associated with substantial morbidity and mortality. More  
8 attention should be devoted to screening for alcohol and drug use and to effective professional  
9 treatment, including office-based brief interventions with behavioral components, and/or referral  
10 for appropriate treatment of substance use disorders, especially when addictive disease is  
11 suspected. Future research efforts should focus on implementation strategies to facilitate adoption  
12 of these practices into routine health care. Additionally, research using neurobiologic approaches  
13 to identify why some individuals are more susceptible to developing substance use disorders may  
14 be informative.

15  
16 RECOMMENDATIONS

17  
18 The Council on Science and Public Health recommends that the following recommendations be  
19 adopted and that the remainder of this report be filed:

- 20  
21 1. That our American Medical Association (AMA) continue to seek and participate in  
22 partnerships designed to foster awareness and to promote screening, diagnosis, and  
23 appropriate treatment of substance misuse and substance use disorders. (Directive to Take  
24 Action)
- 25  
26 2. That our AMA renew its efforts to: (a) have substance use disorders addressed across the  
27 continuum of medical education; (b) provide tools to assist physicians in screening,  
28 diagnosing, intervening, and/or referring patients with substance use disorders so that they  
29 have access to treatment; (c) develop partnerships with other organizations to promote  
30 national policies to prevent and treat these illnesses, particularly in adolescents and young  
31 adults; and (d) assist physicians in becoming valuable resources for the general public, in  
32 order to reduce the stigma and enhance knowledge about substance use disorders and to  
33 communicate the fact that substance use disorder is a treatable disease. (Directive to Take  
34 Action)
- 35  
36 3. That our AMA support appropriate federal and state legislation that would enhance the  
37 prevention, diagnosis, and treatment of substance use disorders. (Directive to Take Action)

Fiscal Note: \$15,000

References

1. Substance Abuse and Mental Health Administration—Office of Applied Studies. Results from the 2006 National Survey on Drug Use and Health: national findings. Available at: <http://oas.samhsa.gov/nsduh/2k6nsduh/2k6Results.pdf>. Accessed March 4, 2008.
2. U.S. Department of Health and Human Services. The Surgeon General's Call to Action To Prevent and Reduce Underage Drinking. U.S. Department of Health and Human Services, Office of the Surgeon General; 2007. Available at: <http://www.surgeongeneral.gov> and at <http://www.hhs.gov/od>. Accessed April 8, 2008.
3. National Institute on Alcohol Abuse and Alcoholism. *Alcohol Alert No 70*. National Epidemiologic Survey on Alcohol and Related Conditions. Available at: <http://pubs.niaaa.nih.gov/publications/AA70/AA70.pdf>. Accessed March 7, 2008.
4. National Center for Chronic Disease Prevention & Health Promotion. Behavioral Risk Factor Surveillance System. Trends Data. Alcohol Use: Binge Drinking. Available at: <http://apps.nccd.cdc.gov/brfss/Trends/trendchart.asp?qkey=10100&state=US>. Accessed March 4, 2008.
5. Naimi TS, Brewer RD, Mokdad A, Denny C, Serdula MK, Marks JS. Binge drinking among U.S. adults. *JAMA*. 2003;289:70-75.
6. Johnston LD, O'Malley PM, Bachman JG, Schulenberg JE. Overall, illicit drug use by American teens continues gradual decline in 2007. December 11, 2007. Ann Arbor, MI: University of Michigan News Service. Available at: [www.monitoringthefuture.org](http://www.monitoringthefuture.org). Accessed March 4, 2008.
7. Dawson DA, Grant BF, Stinson FS, et al. Recovery from DSM-IV alcohol dependence: United States 2001-2002. *Addiction*. 2005;100:281-292.
8. Substance Abuse and Mental Health Services Administration, Office of Applied Studies. *Drug Abuse Warning Network, 2005: National Estimates of Drug-Related Emergency Department Visits*. DAWN Series D-29, DHHS Publication No. (SMA) 07-4256, Rockville, MD; 2007. Available at: <http://dawninfo.samhsa.gov/files/DAWN-ED-2005-Web.pdf>. Accessed March 8, 2008.
9. Substance Abuse and Mental Health Services Administration, Office of Applied Studies. *Treatment Episode Data Set (TEDS)*. Highlights – 2005. National Admission to Substance Abuse Treatment Services, DASIS Series: S-36, DHHS Publication No. (SMA) 07-4229, Rockville, MD; 2006. Available at: [http://www.dasis.samhsa.gov/teds05/tedshi2k5\\_web.pdf](http://www.dasis.samhsa.gov/teds05/tedshi2k5_web.pdf). Accessed March 8, 2008.
10. Brady KT, Sinha R. Co-occurring mental and substance use disorder: the neurobiological effects of chronic stress. *Am J Psychiatry*. 2005;162:1483-1493.
11. Mokdad AH, Marks JS, Stroup DF, Gerberding JL. Actual causes of death in the United States, 2000. *JAMA*. 2004;291:1238-1245.

12. National Institute on Drug Abuse. *Addiction: It's a Brain Disease Beyond a Reasonable Doubt*. NIH Pub. No. 07-5605. April 2007.
13. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders*, 4<sup>th</sup> edition, Text Revision. Washington, DC: American Psychiatric Association; 2000.
14. The American Academy of Pain Medicine, the American Pain Society, and the American Society of Addiction Medicine. Consensus Statement: Definitions Related to the Use of Opioids for the Treatment of Pain. Available at: <http://161.58.165.114/ppol/Opoid%20Definition%20C%2002.htm>. Accessed April 16, 2008.
15. Heit HA. Addiction, physical dependence, and tolerance: precise definitions to help clinicians evaluate and treat chronic pain patients. *J Pain Palliat Care Pharmacother*. 2003;17:15-29.
16. Institute of Medicine, Committee on Crossing the Quality Chasm. Adaptation to Mental Health and Addictive Disorders. Board of Health Care Services. *Improving the Quality of Health Care for Mental and Substance-use Conditions*. Washington, DC: National Academies Press; 2006.
17. Institute of Medicine, Committee for the Study of Treatment and Rehabilitation Services for Alcoholism and Alcohol Abuse. *Broadening the Base of Treatment of Alcohol Problems*. Washington, DC: National Academy of Sciences; 1990.
18. American Society of Addiction Medicine. Policy Statement on the Definition of Alcoholism. Available at: <http://161.58.165.114/ppol/Definition%20of%20Alcoholism.htm>. Accessed April 2, 2008.
19. Morse RM, Flavin DK. The definition of alcoholism: The Joint Committee of the National Council on Alcoholism and Drug Dependence and the American Society of Addiction Medicine to study the definition and criteria for the diagnosis of alcoholism. *JAMA*. 1992;268:1012-1014.
20. Kalivas P, Volkow N. The neural basis of addiction: a pathology of motivation and choice. *Am J Psychiatry*. 2005;162:1403-1413.
21. Shedler J, Block J. Adolescent drug use and psychological health: a longitudinal inquiry. *Am Psychol*. 1990;45:612-630.
22. Merikangas KR, Stolar M, Stevens DE, Goulet J, Preisig MA, Fenton B, Zhang H, O'Malley SS, Rounsaville BJ. Familial transmission of substance use disorders. *Arch Gen Psychiatry*. 1998; 55:973-979.
23. Kendler KS, Prescott CA, Myers J, Neale MC. The structure of genetic and environmental risk factors for common psychiatric and substance use disorders in men and women. *Arch Gen Psychiatry*. 2003;60:929-937.
24. Rhee SH, Hewitt JK, Young SE, Corley RP, Crowley TJ, Stallings MC. Genetic and environmental influences on substance initiation, use, and problem use in adolescents. *Arch Gen Psychiatry*. 2003;60:1256-1264.

25. Kelley AE, Berridge KC. The neuroscience of natural rewards: relevance to addictive drugs. *J Neurosci.* 2002;22:3306–3311.
26. Nestler EJ. Common molecular and cellular substrates of addiction and memory. *Neurobiol Learn Mem.* 2002;78:637–647.
27. Goldstein RZ, Volkow ND. Drug addiction and its underlying neurobiological basis: neuroimaging evidence for the involvement of the frontal cortex. *Am J Psychiatry.* 2002; 159:1642–1652.
28. Kauer JA. Learning mechanisms in addiction: synaptic plasticity in the ventral tegmental area as a result of exposure to drugs of abuse. *Annu Rev Physiol.* 2004;66:447-475.
29. Nestler EJ. Is there a common molecular pathway for addiction? *Nat Neurosci.* 2005;8:1445-1449.
30. Miller MM. Traditional approaches to the treatment of addiction. In: Graham AW, Schultz TK, eds. *Principles of Addiction Medicine.* 2<sup>nd</sup> edition. Chevy Chase, MD: American Society of Addiction Medicine; 1998.
31. Betty Ford Institute Consensus Panel. What is recovery? a working definition from the Betty Ford Institute. *J Subst Abuse Treat.* 2007;33:221-228.
32. Weisner C, Mertens J, Parthasarathy S, Moore C, Lu Y. Integrating primary medical care with addiction treatment: a randomized controlled trial. *JAMA.* 2001;286:1715-1723.
33. Parthasarathy S, Mertens J, Moore C, Weisner C. Utilization and cost impact of integrating substance abuse treatment and primary care. *Med Care.* 2003;41:357-367.
34. National Institute on Drug Abuse. Principles of drug addiction treatment. NIH Publication No. 99-4180. Bethesda, MD; 1999. Available at: <http://www.nida.nih.gov/PODAT/PODATIndex.html>. Accessed March 8, 2008.
35. Meyers RJ, Smith JE, Villanueva M: The community reinforcement approach: history and empirical validation. *J Cognitive Psychotherapy.* 2005;19:12-25.
36. American Academy of Child and Adolescent Psychiatry. Practice parameter for the assessment and treatment of children and adolescents with substance use disorders. Available at: <http://www.aacap.org/galleries/PracticeParameters/substanceUseDisorder.pdf>. Accessed March 10, 2008.
37. Fiore MC, Bailey WC, Cohen SJ, et al. *Smoking Cessation.* Rockville, MD: Agency for Health Care Policy and Research, US Department of Health and Human Services; 1996. (Clinical practice guideline No 18. Publication No 96-0692.)
38. Institute of Medicine, Committee on Crossing the Quality Chasm. Improving the quality of health care for mental and substance-use conditions. Washington, DC: National Academies Press; 2006.

39. Kaner EF, Beyer F, Dickinson HO, et al. Effectiveness of brief alcohol interventions in primary care populations. *Cochrane Database Syst Rev.* 2007;(2):CD004148.
40. Whitlock EP, Polen MR. Behavioral counseling interventions in primary care to reduce risky/harmful alcohol use by adults: a summary of the evidence for the U.S. Preventive Services Task Force. *Ann Intern Med.* 2004;140:557-568.
41. Wu P, Wilson K, Dimoulas P, Mills EJ. Effectiveness of smoking cessation therapies: a systematic review and meta-analysis. *BMC Public Health.* 2006;6:300-323.
42. U.S. Department of Health and Human Services Public Health Service; National Institutes of Health; National Institute on Alcohol Abuse and Alcoholism. *Assessing Alcohol Problems. A Guide for Clinicians and Researchers.* 2<sup>nd</sup> Edition. NIH Publication No. 03-3745. Bethesda, MD; 2003.
43. National Conference of State Legislatures. Tobacco Use Cessation: The Effectiveness of Quit Lines. Available at: <http://www.ncsl.org/programs/health/tobaccostop.htm>. Accessed April 16, 2008.
44. The Tobacco Use and Dependence Clinical Practice Guideline Panel, Staff, and Consortium Representatives. A clinical practice guideline for treating tobacco use and dependence: a US Public Health Service report. *JAMA.* 2000;283:3244-3254.
45. Keuhn BM. Despite benefit, physicians slow to offer brief advice on harmful alcohol use. *JAMA.* 2007;299:751-752.
46. Polen M, Whitlock E, Wisdom J, Nygren P, Bougatsos C. Screening in primary care settings for illicit drug use: staged systematic review for the United States Preventive Services Task Force. Evidence Synthesis No. 58, Part 1. AHRQ Publication no. 08-05108-EF-1. Rockville, MD; January 2008.
47. National Institute on Drug Abuse. Preventing drug use among children and adolescents: a research-based guide. 2<sup>nd</sup> edition. NIH Publication no. 04-4212(B). Bethesda, MD; 2003.
48. American Academy of Pediatrics, Council on School Health and Committee on Substance Abuse. The role of schools in combating illicit substance abuse. *Pediatrics.* 2007;120:1379-1384.
49. Center for Substance Abuse and Treatment. Prevention Platform. Available at: <http://prevention.samhsa.gov/about/spf.aspx>. Accessed March 8, 2008.
50. Center for Substance Abuse and Treatment. Prevention Education Tools. Available at: <http://prevention.samhsa.gov/capacity/prevedutools.aspx>. Accessed March 8, 2008.
51. Community Anti-Drug Coalitions of American. Resources available at: <http://cadca.org/>. Accessed April 15, 2008.
52. Block MA, Chairman, Committee on Alcoholism—Council on Mental Health. Medical treatment of alcoholism. *JAMA.* 1956;162:1610-1619.

**Appendix**  
**DSM IV-TR Criteria for Substance Dependence**

A maladaptive pattern of substance use, leading to clinically significant impairment or distress, as manifested by three (or more) of the following, occurring at any time in the same 12-month period:

(1) tolerance, as defined by either of the following:

- (a) a need for markedly increased amounts of the substance to achieve intoxication or desired effect
- (b) markedly diminished effect with continued use of the same amount of the substance

(2) withdrawal, as manifested by either of the following:

- (a) the characteristic withdrawal syndrome for the substance (refer to Criteria A and B of the criteria sets for Withdrawal from the specific substances)
- (b) the same (or a closely related) substance is taken to relieve or avoid withdrawal symptoms

(3) the substance is often taken in larger amounts or over a longer period than was intended

(4) there is a persistent desire or unsuccessful efforts to cut down or control substance use

(5) a great deal of time is spent in activities necessary to obtain the substance (e.g., visiting multiple doctors or driving long distances), use the substance (e.g., chain-smoking), or recover from its effects

(6) important social, occupational, or recreational activities are given up or reduced because of substance use

(7) the substance 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 the substance (e.g., current cocaine use despite recognition of cocaine-induced depression, or continued drinking despite recognition that an ulcer was made worse by alcohol consumption)

*Specify if:*

**With Physiological Dependence:** evidence of tolerance or withdrawal (i.e., either Item 1 or 2 is present)

**Without Physiological Dependence:** no evidence of tolerance or withdrawal (i.e., neither Item 1 nor 2 is present)

\*\*\*\*\*

**DSM IV-TR Criteria for Substance Abuse**

A. A maladaptive pattern of substance use leading to clinically significant impairment or distress, as manifested by one (or more) of the following, occurring within a 12-month period:

- (1) recurrent substance use resulting in a failure to fulfill major role obligations at work, school, or home (e.g., repeated absences or poor work performance related to substance use; substance-related absences, suspensions, or expulsions from school; neglect of children or household)
- (2) recurrent substance use in situations in which it is physically hazardous (e.g., driving an automobile or operating a machine when impaired by substance use)
- (3) recurrent substance-related legal problems (e.g., arrests for substance-related disorderly conduct)
- (4) continued substance use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of the substance (e.g., arguments with spouse about consequences of intoxication, physical fights)

B. The symptoms have never met the criteria for Substance Dependence for this class of substance.