Substance Abuse, General Principles

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Educational Gap

The American Academy of Pediatrics recommends screening for alcohol and other drug use at adolescent health supervision visits and appropriate acute-care visits, (1) yet many clinicians find addressing substance use with youth to be a challenge.

Objectives

After completing this article, the reader should be able to:

1. Describe the use trends for alcohol and common other drugs by youth in the United States.
2. Explain the primary care clinician's role in screening and management of alcohol and substance use.
3. Using motivational interviewing techniques, adopt an in-office brief intervention across the spectrum of adolescent substance use.
4. Analyze the utility of urine drug testing in various clinical situations, such as random screening in a low-risk patient/population, testing an adolescent who self-reports ongoing substance use, monitoring adherence to treatment for a substance use disorder, and evaluating a patient with signs/symptoms of acute toxicity.

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NATURE OF THE PROBLEM

Adolescent drug and alcohol use remains a major issue in the United States. The American Academy of Pediatrics (AAP) recommends screening for use of these substances at adolescent health supervision visits and appropriate acute-care visits. (1) Primary care clinicians (PCCs) serve an important role in both the identification and management of alcohol and substance use disorders (SUDs). This role comes with many challenges, including managing the dynamics of families that may be in crisis, issues of adolescent confidentiality, and high variability of local resources to support patients in need of treatment for SUDs. In this article, we review the epidemiology of alcohol and substance use, the approach to screening and treatment, the issue of adolescent confidentiality, and the role of urine drug testing.

Epidemiology

The epidemiology of adolescent substance use must be considered differently than for many other diseases. Epidemiologic measures traditionally focus simply

on substance use, although use of alcohol and other drugs (AOD) among adolescents ranges from experimentation to SUD. The incidences of health consequences related to use, such as SUD, endocarditis related to intravenous drug use, or alcohol-related liver disease, are other traditional epidemiologic measures. However, these late-stage manifestations are less common in pediatric populations and could underestimate problematic AOD use. Because of this, including descriptions of the patterns of use provides a more robust understanding of the epidemiology of adolescent substance use.

Many groups have studied patterns of adolescent AOD use. The epidemiologic data provided here are from the national 2014 Monitoring the Future (MTF) report. (2) Use rates have varied over the course of the study, which began in 1975. Use at different ages are tracked by the study (8th, 10th, and 12th graders) in parallel (Fig 1).

Alcohol, tobacco, and marijuana are among the substances most frequently used by adolescents. Although nonmedical use of prescription medications is reported at lower rates, such use continues to be problematic. Overall rates of use by youth for many substances have declined, although use levels still remain relatively high and substance use continues to be a substantial public health problem for this age group.

In earlier years of the MTF study, alcohol use ran parallel to use of any illicit substance. In the past 15 years, alcohol use has steadily declined to record lows at 66% of 12th graders reporting any use and 49.8% reporting having been drunk before completing high school. Approximately 50% of high

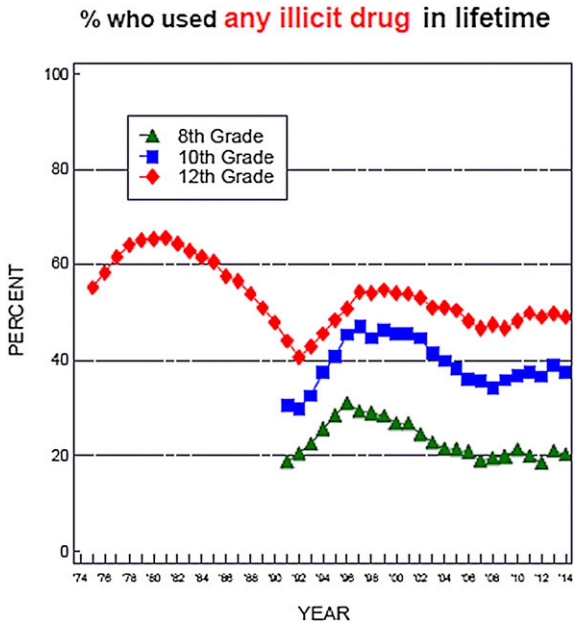

Figure 1. Trends in lifetime prevalence of illicit drug use among 8th-, 10th-, and 12th-grade students. Reproduced from *Monitoring the Future*. (2)

school students have used alcohol by 10th grade. Tobacco use has similarly declined, with 34.4% of 12th graders reporting having ever tried cigarettes and 6.7% reporting daily use in 2014 compared with the most recent peaks of 65.4% and 24.6% in 1997, respectively. Statistics from 2014 show cigarette smoking and alcohol use at their lowest levels in the history of the survey. The new product of e-cigarettes has made rapid inroads among adolescents, however, and its reported prevalence is now higher than that of tobacco cigarette smoking. (2)

The most recently reported marijuana use is stable at 44.4% for 12th graders in 2014. This comes after substantial declines in the early 1990s, followed by increased use in the mid-1990s to 2000s. Increases in use have been associated with declines in perceived risk of use that have paralleled the national conversation regarding changes in marijuana policy. Nonmedical use of prescription medications increased significantly in the 1990s and then slowly declined from 2005 to 2008 to 19.9% lifetime prevalence among 12th graders surveyed in 2014. Prescription drugs taken without medical supervision include narcotics, sedatives, tranquilizers, and stimulants, such as amphetamines used in the treatment of attention-deficit disorder. Narcotics other than heroin, including the analgesic oxycodone, are among the most dangerous of prescription drugs. Use of these drugs declined since peaks in about 2009, with some reports from students that they are increasingly difficult to obtain. (2)

Abused over-the-counter drugs are often cold and cough medications containing dextromethorphan that, when taken in large quantities to get "high," can be dangerous. Abuse of these over-the-counter drugs has fallen since 2006, with an annual prevalence of less than 4.0% for 8th, 10th, and 12th graders combined. (2)

Correlates of Use

Multiple risk factors are associated with adolescent substance use; social, biological, and genetic/epigenetic factors likely all play a role. Socially, academic failure predisposes to multiple types of adolescent dysfunction, including use of AOD. Parental tolerance of adolescent substance use and use by close contacts, such as the adolescent's friends or even parents, are predictive of adolescent substance use. Other social factors, such as child abuse or family disruption, are also associated. In contrast, a sense of connectedness, either to school, family, or community, is protective against substance use in youth. (3)

On a neurodevelopmental level, adolescence is a critical time with respect to substance use. The sequential maturation of the typically developing brain leaves adolescents in an "imbalanced" state. During adolescence, the incentive

and reward neuronal pathways are very active. In contrast, the prefrontal cortex, involved in executive function, is one of the last areas to mature in the early to mid-third decade of life. This later maturation partially explains the increased risk-taking behavior seen among adolescents. As a result of active incentive and reward pathways and still developing executive function, substance exposure is more likely and results in activation and reinforcement of those incentive and reward pathways in response to the substance used. This leaves youth uniquely vulnerable to the development of problematic substance use, and early drug use is associated with a higher probability of SUDs. Differences in brain architecture and neurocognitive function have also been noted in adolescents using alcohol and marijuana compared to nonusing controls. Genetic predisposition is believed to be contributory; this and epigenetic contributors (the impact of environmental and social factors on gene expression) are areas of active study. (3)

All of these correlates of use inform areas for ongoing study and intervention. There are opportunities for intervention at the level of the individual and community or more broadly through public policy. Within the local community, involvement of clinicians in substance use education in schools and communities is one important opportunity for primary prevention of substance use.

Diagnosis

Diagnostic criteria for specific SUDs were redefined in the fifth edition of the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders* (DSM-V), (4) combining prior diagnoses that distinguished between addiction and dependence. A representative example for cannabis use disorder is shown in Table 1.

SCREENING, BRIEF INTERVENTION, AND REFERRAL TO TREATMENT (SBIRT)

Pediatricians and other PCCs have a well-recognized role in the prevention, detection, and management of many risk behaviors, including substance use. The AAP recommends universal screening of adolescents for tobacco, alcohol, and other drug use with a formal validated screening tool at every health supervision visit and appropriate acute-care visits. (1) In some instances, substance use is the reason for medical evaluation, either directly or indirectly. A caregiver may bring the patient in for suspected/observed use or because of other concerning behavior that is less specific for substance use. Adolescent dysfunction, such as decreased school performance, delinquency, multiple sexual partners, family conflict, running away from home, depression, or suicide attempts, may be concomitant with substance use/abuse. Psychiatric symptoms are common among adolescents with SUDs.

Many adolescents present with chief complaints that may not appear to pertain to substance use. They also may benefit from screening for use of AOD because substance use varies from experimentation to SUD. Even adolescents who are abstaining from substance use may benefit from discussions that follow screening and positive reinforcement of healthy lifestyle choices. The US Preventive Services Task Force recently concluded that evidence is insufficient to support brief interventions for adolescent AOD use. However, the AAP and US Substance Abuse and Mental Health Services Administration still recommend SBIRT, based on the very low cost and low risk of the intervention, with the caveat that further research studies are needed. The AAP will provide further guidance on evidence-based approaches to screening and appropriate interventions for problematic substance use in their upcoming policy statement on SBIRT, updated from the initial 2011 statement.

Screening

A variety of methods are available to screen for adolescent substance use and are often incorporated into health supervision visits as part of broader adolescent screens. Recently, the US National Institute on Drug Abuse funded the development of brief adolescent substance abuse screening tools that are self- or interviewer-administered and compatible with electronic health records. The Screening to Brief Intervention tool (S2BI) uses a comprehensive stem question and forced response items to assess the frequency (none, once or twice, monthly, weekly or more) of past-year use for tobacco, alcohol, marijuana, and five other classes of substances commonly used by adolescents. In the initial validation study, this tool had high sensitivity and specificity for discriminating among clinically relevant risk categories of adolescent substance use: no use, substance use without a SUD (correlated to a response of use "once or twice"), mild or moderate SUD (correlated to a response of "monthly"), and severe SUD (correlated to a response of "weekly or more"). Although these results require validation in studies with larger samples, the excellent psychometric properties of the screen, the ability for both self and interviewer administration, and the fact that the process takes less than 1 minute to complete are very promising. Figure 2 is a clinical SBIRT algorithm based on the S2BI tool. (5)

Motivational intervention is recommended as a next step following monthly or weekly use reported for eight types of drugs in the past year on the S2BI screen. The CRAFFT questions can be used for brief assessment of problems associated with substance abuse and as well as facilitation of a plan: (6)

TABLE 1. *Diagnostic and Statistical Manual of Mental Disorders* (5th Edition) Diagnostic Criteria for Cannabis Use Disorder

Note: specific substance use disorders are defined for each major drug class, for example, alcohol use disorder, phencyclidine use disorder, and so on. Cannabis use disorder is presented here as a representative sample.
A pattern of cannabis use leading to clinically significant impairment or distress, as manifested by at least two of the following, occurring within a 12 month period:
1. Cannabis is often taken in larger amounts or over a longer period than was intended.
2. There is a persistent desire or unsuccessful efforts to cut down or control cannabis use.
3. A great deal of time is spent in activities necessary to obtain cannabis, use cannabis, or recover from its effects.
4. Craving, or a strong desire or urge to use cannabis.
5. Recurrent cannabis use resulting in a failure to fulfill major role obligations at work, school, or home.
6. Continued cannabis use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of cannabis.
7. Important social, occupational, or recreational activities are given up or reduced because of cannabis use.
8. Recurrent cannabis use in situations in which it is physically hazardous.
9. Cannabis 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 cannabis.
10. Tolerance, as defined by either of the following:
a. A need for markedly increased amounts of cannabis to achieve intoxication or desired effect.
b. A markedly diminished effect with continued use of the same amount of cannabis.
11. Withdrawal, as manifested by either of the following:
a. The characteristic withdrawal syndrome for cannabis (refer to Criteria A and B of the criteria set for cannabis withdrawal).
b. Cannabis (or a closely related substance) is taken to relieve or avoid withdrawal symptoms.
Specify if:
• **In early remission:** After full criteria for cannabis use disorder were previously met, none of the criteria for cannabis 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 cannabis," may be met).
• **In sustained remission:** After full criteria for cannabis use disorder were previously met, none of the criteria for cannabis 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 cannabis," may be met).
Specify if:
• **In a controlled environment:** This additional specifier is used if the individual is in an environment where access to the cannabis is restricted.
Specify current severity:
Mild: Presence of 2–3 symptoms.
Moderate: Presence of 4–5 symptoms.
Severe: Presence of 6 or more symptoms.

Reproduced from the DSM-V. (4)

C Have you even ridden in a **CAR** driven by someone (including yourself) who was "high" or had been using alcohol or drugs?

R Do you ever use alcohol or drugs to **RELAX**, feel better about yourself, or fit in?

A Do you ever use alcohol or drugs while you are by yourself or **ALONE**?

F Do you ever **FORGET** things you did while using alcohol or drugs?

F Do your family or **FRIENDS** ever tell you that you should cut down on your drinking or drug use?

T Have you ever gotten into **TROUBLE** while you were using alcohol or drugs?

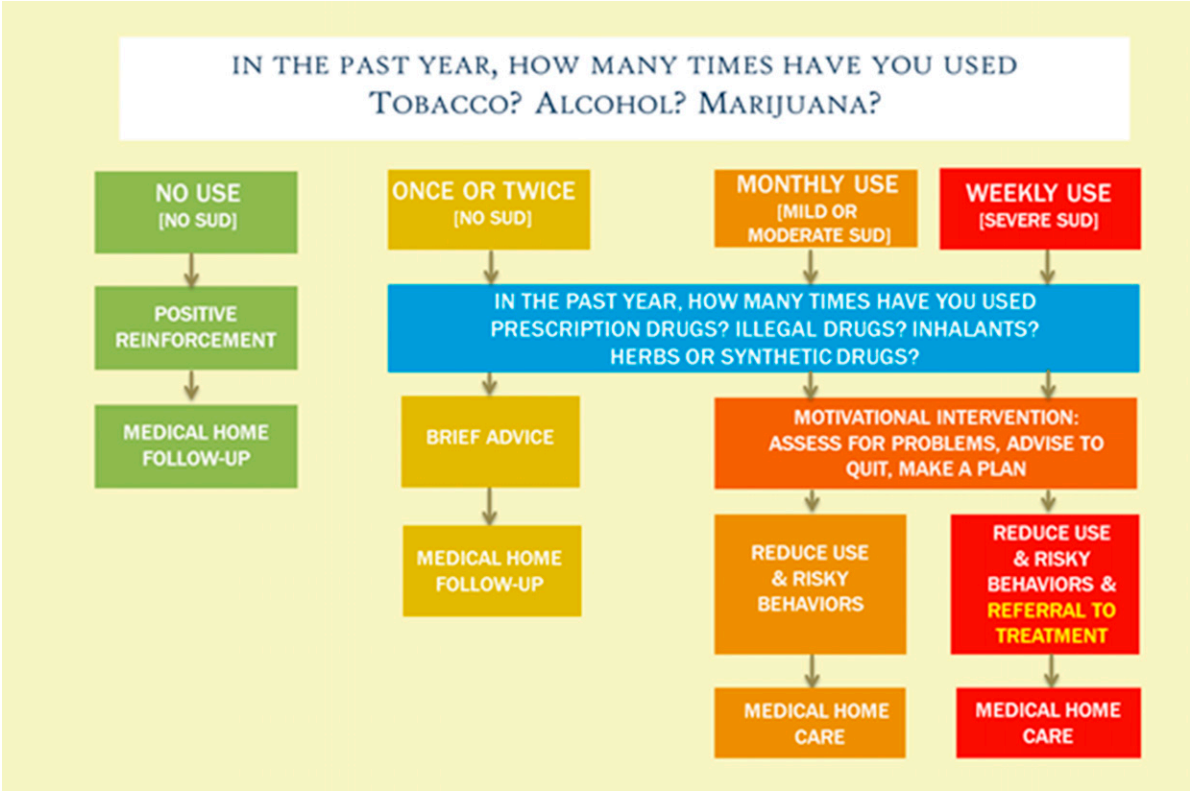

Figure 2. S2BI algorithm. © Boston Children's Hospital 2014. All rights reserved. This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License. Reprinted with permission.

The National Institute on Alcohol Abuse and Alcoholism (NIAAA) has an alternate alcohol use screen that can be adapted to younger patients. They recommend screening middle school-age and younger patients by asking first about friends' use patterns, then asking about individual use. The order of questions should be reversed for older adolescents. (Fig 3). In addition to assessing current use, this approach helps identify patients who may be abstaining currently but

Elementary school-age patients	"Do you have any friends who drank beer, wine, or any drink containing alcohol in the past year?"	→	"How about you – have you ever had more than a few sips of beer, wine, or any drink containing alcohol?"
Middle school-age patients	"Do you have any friends who drank beer, wine, or any drink containing alcohol in the past year?"	→	"How about you – in the past year, on how many days have you had more than a few sips of beer, wine, or any drink containing alcohol?"
High school-age patients	"In the past year, on how many days have you had more than a few sips of beer, wine, or any drink containing alcohol?"	→	"If your friends drink, how many drinks do they usually drink on an occasion?

Follow-up questions and management algorithm are described in the full NIAAA *Alcohol Screening and Brief Intervention for Youth: A Practitioner's Guide.*

Figure 3. National Institute on Alcohol Abuse and Alcoholism (NIAAA) two-step alcohol screen by patient age. (7)

TABLE 2. **Substance Use Spectrum and Goals for Office Intervention**

STAGE	DESCRIPTION	OFFICE INTERVENTION GOALS
Abstinence	The time before an individual has ever used drugs or alcohol (more than a few sips)	Prevent or delay initiation of substance use through positive reinforcement and patient/parent education
Experimentation	The first 1-2 times that a substance is used and the adolescent wants to know how intoxication from using a certain drug(s) feels	Promote patient strengths; encourage abstinence and cessation through brief, clear medical advice and educational counseling
Limited use	Use together with ≥ 1 friend(s) in relatively low-risk situations and without related problems; typically, use occurs at predictable times such as on weekends	Promote patient strengths; further encourage cessation through brief, clear medical advice and educational counseling
Problematic use	Use in a high-risk situation, such as when driving or babysitting; use associated with a problem such as a fight, arrest, or school suspension; or use for emotional regulation such as to relieve stress or depression	As stated above, plus initiate office visits or referral for brief intervention to enhance motivation to make behavioral changes; provide close patient follow-up; consider breaking confidentiality
Substance use disorder	Drug use associated with recurrent problems or that interferes with functioning, as defined in the *DSM-V*	Continue as stated above, plus enhance motivation to make behavioral changes by exploring ambivalence and triggering preparation for action; refer for comprehensive assessment and treatment; consider breaking confidentiality; encourage parental involvement whenever possible

DSM-V=Diagnostic and Statistical Manual of Mental Disorders, *Fifth Edition*.
Adapted from: Committee on Substance Abuse, Levy SJ, Kokotailo PK. Substance use screening, brief intervention, and referral to treatment for pediatricians. Pediatrics. *2011;128(5):e1330–1340. Available at: http://pediatrics.aappublications.org/content/128/5/e1330.full.*

are at risk for future use. Follow-up questions and management algorithms are described in the NIAAA's *Alcohol Screening and Brief Intervention For Youth: A Practitioner's Guide*. (7)

The CRAFFT questions begin to assess the patterns of use and associated problems. Determining the specific substances used as well as the frequency and amount of use is critical to understand specific risks. Understanding the circumstances of use can identify other risks associated with use and inform intervention strategies. This information can also help a clinician place a patient on the spectrum from abstinence to SUD (Table 2).

The caregiver may provide important historical information that is critical for determining further management. The caregiver who has concerns about his or her child's suspected or known substance use can give additional insight into the symptoms he or she has observed and may share school or law enforcement records that pertain to the patient's substance use. Parental opinions about drug/alcohol use and even their own personal substance use may also affect adolescent behavior. In addition to the caregiver's contributions to the history of present illness, a detailed family and social history should be obtained.

Brief Intervention in the Primary Care Office

Management varies, depending upon level of use and associated risk factors, as shown in the S2BI algorithm (Fig 2). The first steps in management of adolescent substance use and SUDs is a brief intervention based on motivational interviewing techniques, followed by referral to treatment as appropriate. The goal of motivational interviewing is to assess the patient's readiness to make a change, help him/her to identify reasons for change, and support his/her autonomy to do so. The desired change may be discontinuation of substance use or may focus on risk reduction, depending upon the patient's level and risks of use. Although the quality of research on the effectiveness of motivational interviewing techniques for reducing substance use and related problems has varied, it is believed to have substantial effects for intervention in adolescents and young adults. (8) Examples of motivational interviewing are reviewed here briefly; the seminal work by Miller and Rollnick provides more detailed information. (9)

During the brief intervention, the interviewer should partner with the patient. The conversation may include exploration of life goals, reasons for substance use, and disadvantages or consequences of use. Reflective listening and repeating back this information can help highlight how substance use and its consequences may interfere with aspirations and may help inspire the patient to make a healthy change. For example, "It sounds like you and your friends smoke marijuana as a way to relax on the weekends. On the other hand, you've found this is an expensive habit and noticed you feel more depressed as you've started smoking more. You

were also kicked off the soccer team because you got caught. What do you make of this?" A long pause, waiting for the patient to consider this representation of his or her statements before responding, can be revealing.

All patients and their families can benefit from anticipatory guidance about the dangers of AOD use. This may include problem-solving to minimize the risks, such as avoidance of drinking and driving, and advice to parents about appropriate monitoring. Local resources through organizations such as Safe Rides or Students/Mothers/Dads Against Drunk Driving may help patients develop a safety plan to mitigate risks of use.

For patients who report no substance use, positive reinforcement and brief advice "not to use" can help to maintain abstinence in the future and encourage patients to plan how they might succeed in continuing to abstain. Anticipatory guidance should also be provided as noted previously. Some teens may be at low risk in that they abstain from substance use but still be at risk for morbidity and mortality due to riding in a vehicle operated by a driver who is under the influence of alcohol or drugs. For these patients, it is important to help them recognize this as a risk and develop a safety plan to avoid it in the future. Consider breaking confidentiality if the patient cannot or will not commit to safety.

Adolescents who report using a substance "once or twice" in the past year are unlikely to have a SUD or related problems. A brief explanation of health risks and advice to not use substances is appropriate. For adolescents with mild-to-moderate SUD, a brief motivational intervention starting with the previously noted CRAFFT questions is recommended. Motivational interviewing techniques can be used to identify consequences of use or the potential for use to interfere with perceived strengths and future plans. The core activity of the brief intervention involves comparing the benefits of continued substance abuse with the benefits of behavioral change. The goal of discussion is to help adolescents commit to discontinuing or decreasing use.

Adolescents with severe SUDs need referral for treatment. Additional information about patterns of use is necessary to assess for acute danger or SUD (Table 3); focused questions can help diagnose SUDs according to the DSM-V criteria (Table 1).

Referral to Subspecialty Treatment

Local resources for adolescent SUD treatment may vary and extend beyond the medical realm into school and community resources. PCCs should familiarize themselves with local resources, which may include school counseling services, mental health facilities, or drug and alcohol treatment centers. Referral to addiction medicine, adolescent medicine, or mental health specialists may be appropriate for subsequent evaluation, counseling, and possible pharmacotherapy. The subspecialty clinician can help determine the appropriate level of therapy (Table 4).

The PCC plays an important role in this process as well. First, he/she must engage the patient and family in a conversation at the time of referral to prepare them for the next steps in evaluation and treatment. Frequent PCC follow-up throughout the ongoing subspecialty management can sometimes prevent or at least help with early identification of relapse. Unlike many medical conditions where cure is more easily attainable, relapse is common and expected with SUDs. Patients remain at risk for relapse years after attaining sobriety, and relapse can serve as a learning opportunity during recovery.

CONFIDENTIALITY

Substance use falls within the bounds of adolescent confidentiality (along with mental health, sexuality, and reproductive

TABLE 3. **Signs of Acute Danger(1)**

• Drug-related hospital visits
• Intravenous drug use
• Combining sedatives (alcohol, benzodiazepines, barbiturates, opioids)
• Consuming a potentially lethal volume of alcohol
• Driving or engaging in other potentially dangerous activities after alcohol or drug use
Follow-up:
✓ *If signs of acute danger are present*, refer for detailed evaluation and subspecialty treatment.
✓ *Whenever signs of acute danger are present*, safety planning must occur. A safety contract and close follow-up to ensure safety and compliance may be helpful. Consider breaking confidentiality if adolescents are unwilling or unable to commit to safety.
✓ *If not present*, proceed with an in-office brief intervention.

TABLE 4. **Substance Use Treatment**

OUTPATIENT	
Group therapy	Group therapy is a mainstay of substance abuse treatment for adolescents with substance use disorder. It is a particularly attractive option because it is cost-effective and takes advantage of the developmental preference for congregating with peers. However, group therapy has not been extensively evaluated as a therapeutic modality in this age group, and existing research has produced mixed results. (10)(11)
Family therapy	Family-directed therapies are the best validated approach for treating adolescent substance abuse. A number of modalities have been demonstrated effective. Family counseling typically targets domains that figure prominently in the etiology of substance use disorder in adolescents: family conflict, communication, parental monitoring, discipline, child abuse/neglect, and parental substance use disorder. (10)
Intensive outpatient program	Intensive outpatient programs serve as an intermediate level of care for patients who have needs that are too complex for outpatient treatment but do not require inpatient services. These programs allow people to continue with their daily routine and practice newly acquired recovery skills both at home and at work. Intensive outpatient programs generally comprise a combination of supportive group therapy, educational groups, family therapy, individual therapy, relapse prevention and life skills, 12-step recovery, case management, and aftercare planning. The programs range from 2–3 h/d for 2–5 d/wk and last 1–3 months. These programs are appealing because they provide a plethora of services in a relatively short period of time.[a] (12)
Partial hospital program	Partial hospitalization is a short-term, comprehensive outpatient program in affiliation with a hospital that is designed to provide support and treatment for patients with substance use disorder. The services offered at these programs are more concentrated and intensive than regular outpatient treatment; they are structured throughout the entire day and offer medical monitoring in addition to individual and group therapy. Participants typically attend sessions for 7 or 8 h/d, at least 5 d/wk, for 1–3 weeks. As with intensive outpatient programs, patients return home in the evenings and have a chance to practice newly acquired recovery skills.[b] (13)
INPATIENT/RESIDENTIAL	
Detoxification	Detoxification refers to the medical management of symptoms of withdrawal. Medically supervised detoxification is indicated for any adolescent who is at risk of withdrawing from alcohol or benzodiazepines and might also be helpful for adolescents withdrawing from opioids, cocaine, or other substances. Detoxification may be an important first step but is not considered definitive treatment. Patients who are discharged from a detoxification program should then begin either an outpatient or residential substance abuse treatment program. (11)(14)
Acute residential treatment	Acute residential treatment is a short-term (days to weeks) residential placement designed to stabilize patients in crisis, often before entering a longer-term residential treatment program. (14) Acute residential treatment programs typically target adolescents with co-occurring mental health disorders.
Residential treatment	Residential treatment programs are highly structured live-in environments that provide therapy for those with severe substance abuse, mental illness, or behavioral problems that require 24-hour care. The goal of residential treatment is to promote the achievement and subsequent maintenance of long-term abstinence and equip each patient with both the social and coping skills necessary for a successful transition back into society. Residential programs are classified as short-term (<30 d) or long-term (>30 d). Residential programs generally comprise individual and group-therapy sessions plus medical, psychological, clinical, nutritional, and educational components. Residential facilities aim to simulate real living environments with added structure and routine to prepare patients with the framework necessary for their lives to continue drug- and alcohol-free after completion of the program.[c] (15)
Therapeutic boarding school	Therapeutic boarding schools are educational institutions that provide constant supervision for their students by a professional staff. These schools offer a highly structured environment with set times for all activities; smaller, more specialized classes; and social and emotional support. In addition to the regular services offered at traditional boarding schools, therapeutic schools also provide individual and group therapy for adolescents with mental health or substance use disorder.[d] (16)

[a] *See www.ncbi.nlm.nih.gov/books/NBK25875.*
[b] *See http://www.cignabehavioral.com/web/basicsite/provider/providerOnlyPage.jsp.*
[c] *See www.ncbi.nlm.nih.gov/books/NBK25881.*
[d] *See www.ncbi.nlm.nih.gov/books/NBK24159.*

Reproduced from Committee on Substance Abuse, Levy SJ, Kokotailo PK. Susbstance use screening, brief intervention, and referral to treatment for pediatricians. Pediatrics. *2011;128(5):e1330–1340. Available at: http://pediatrics.aappublications.org/content/128/5/e1330.full.*

health issues), as endorsed by the AAP and Society for Adolescent Medicine. (17)(18) It is often helpful to review with both the minor patient and his or her caregiver examples of what can be kept confidential as well as the limits of confidentiality (abuse, self-injury, plans to harm others). Substance use screening subsequently may be performed with the adolescent privately, although issues may need to be addressed with patient and caregiver together, depending upon the degree of danger present to self and others.

There are some limits to confidentiality as well as times when it is helpful to encourage adolescents to disclose their substance use to their caregivers. Depending upon local laws, many adolescents may be able to obtain confidential treatment for alcohol or SUDs. Despite this, adolescents tend to be more successful in treatment when well supported, and clinicians should encourage adolescents to disclose AOD use to their parents. Clinicians can serve an important role in facilitating this discussion. Consider breaking confidentiality in situations where adolescents are engaging in substance use behaviors that are high risk for morbidity and mortality, especially if the adolescent states that he/she cannot or will not make a change or disclose to caregivers.

DRUG TESTING

Testing for evidence of drug use can be particularly helpful for monitoring compliance with SUD treatment and in cases of acute intoxication where identification of specific substances guides acute medical management. It is not a routine part of substance use screening and is not necessary to initiate substance use treatment; a thorough history is most important. Caregivers may request that a teen undergo drug testing, sometimes without the teen's consent or knowledge. Testing without the patient's consent undermines the therapeutic relationship between physician and patient. The AAP also opposes widespread implementation of school drug testing programs because of the lack of solid evidence for their effectiveness. (19)

A request for drug testing often can be addressed by eliciting the caregiver's concern and reasons for wanting the test, sharing the limitations of testing, and facilitating a discussion with patient and caregiver together. The discussion should include consideration of how different possible outcomes of the test may alter (or not alter) the care plan. If the patient admits to substance use, testing may not improve management. Alternatively, some patients may want to take a test to show their caregivers that they are not using a substance. This conversation also can elicit challenging family dynamics not related to substance use and may support referral for individual or family counseling.

The type of drug testing used depends upon local resources. Urine drug testing is most common, is readily available, and has been most rigorously studied. However, it is also easy to adulterate or substitute a specimen if not collected under direct observation. Tests have variable sensitivity and specificity, with frequent false-positive or false-negative results. False-positive results may be due to certain food products or medications and vary somewhat, depending upon the specific assay used. Most urine drug tests are screening immunoassays, and clinicians should consider confirmatory testing of positive screening tests by gas chromatography/mass spectroscopy, depending upon the situation and ramifications of a positive result. False-negative results may occur due to variation in hydration status and the limitations of the test itself, such as the cutoff concentration and window of detection. Even multitest panels cannot detect every psychoactive substance. For example, synthetic cannabinoids, dextromethorphan, and methylenedioxymethamphetamine (MDMA/Ecstasy/Molly) have all recently had periods of popularity among teens but are not typically included in test panels. Inhalants are not excreted in the urine and cannot be detected by urine tests. The specific substance, an individual's metabolism, and the frequency and amount of use all affect the window of detection, which generally ranges from days to weeks. For example, marijuana can be detected in the urine for up to about 3 days after single use and up to 1 month with chronic heavy use. (20)

Summary

- On the basis of strong evidence, alcohol, tobacco, and marijuana remain the most commonly abused substances by youth; nonmedical use of prescription drugs is also of great concern.
- On the basis of strong research and substantiated experiential evidence, screening, brief intervention, and referral to treatment is a widely used approach to substance use screening and management; additional study is needed to determine the most effective screening tools and impact of in-office brief intervention.
- On the basis of consensus, management of adolescent substance use remains challenging, in part due to confidentiality issues; clinicians must use their best judgment to determine when significant risks may warrant breaking confidentiality.
- On the basis of consensus, family input and support with referrals to treatment remain very important factors in recovery.

CONCLUSION

Although use of some substances is on the decline, use of alcohol and other drugs remains a substantial public health problem for many youth in the United States. (2) Better screening and brief interventions have been developed and continue to be actively studied. (1)(5)(7) Coordination of continued management and referral to treatment remain an important yet challenging role for clinicians dealing with adolescents. Current recommendations are based on research evidence (5)(7)(8) as well as consensus. Ongoing research in the neurodevelopmental aspects of substance use and abuse as well as screening and interviewing strategies should aid in developing better management strategies and improve evidence-based practice in this area.

CME quiz and references for this article are at http://pedsinreview.aappublications.org/content/36/12/535.full.

PIR Quiz

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2. To access all CME articles, click "Journal CME" from Gateway's orange main menu. Use the publications filter at right to refine results to a specific journal.

1. You are asked to speak to parents and teachers about adolescent alcohol and other drug use at your local high school. Which of the following statements most accurately describes the rates of use of alcohol and other drugs in the United States?
   A. Nonmedical use of prescription drugs has increased over the past decade.
   B. Use of alcohol has increased over the past 15 years.
   C. Use of marijuana is currently stable, having increased from the mid-1990s to 2000s.
   D. Use of narcotics other than heroin has increased since 2009.
   E. Use of tobacco has increased over the over the past 15 years.
2. You are seeing an 18-year-old male high school senior in your office for a general health supervision visit. You ask the parents to leave the room and ask the teen about substance use. He denies smoking any marijuana or using any other substances or drugs to get "high." However, he does admit to drinking several beers a month, usually at parties. Which of the following would you do next in the office?
   A. Ask the parents to come back in the room and continue your history in their presence.
   B. Do nothing because most 12th graders report use of alcohol.
   C. Obtain further information to determine the extent and risk of alcohol use.
   D. Obtain random urine drug screen.
   E. Refer the teen to an alcohol counselor for further evaluation.
3. Which of the following statements regarding urine drug testing is most accurate?
   A. A negative urine drug screen rules out substance use.
   B. It can be helpful to monitor compliance with a substance use disorder treatment.
   C. It is a routine part of substance use screening.
   D. It is necessary to initiate substance use treatment.
   E. It should be obtained at parents' request if the patient has falling grades.
4. A 17-year-old female whom you are screening for substance use during a general health supervision visit admits to alcohol and marijuana use. You use the CRAFFT screening tool to further evaluate her substance use and discover that she admits to driving under the influence of alcohol and sometime using marijuana to relieve stress. Of the following, the substance use stage that best describes this patient is:
   A. Addiction.
   B. Experimentation.
   C. Limited use.
   D. Problematic use.
   E. Substance use disorder.
5. Which of the following is a red flag for a substance abuse disorder?
   A. Alcohol-related blackouts.
   B. CRAFFT score=3.
   C. Drinking alcohol when babysitting.
   D. First use of alcohol at age 16 years.
   E. Use of alcohol on weekends.

REQUIREMENTS: Learners can take *Pediatrics in Review* quizzes and claim credit online only at: http://pedsinreview.org.

To successfully complete 2015 *Pediatrics in Review* articles for *AMA PRA Category 1 Credit™*, learners must demonstrate a minimum performance level of 60% or higher on this assessment, which measures achievement of the educational purpose and/or objectives of this activity. If you score less than 60% on the assessment, you will be given additional opportunities to answer questions until an overall 60% or greater score is achieved.

This journal-based CME activity is available through Dec. 31, 2017, however, credit will be recorded in the year in which the learner completes the quiz.

Substance Abuse, General Principles

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