REVIEW SUBSTANCE USE

Narrative review: Revised Principles and Practice Recommendations for Adolescent Substance Use Treatment and Policy

Justine W. Welsh, MD, Alex R. Dopp, PhD, Rebecca M. Durham, BS, Siara I. Sitar, MS, Lora L. Passetti, MS, Sarah B. Hunter, PhD, Mark D. Godley, PhD, Ken C. Winters, PhD

Objective: In 2014, the U.S. National Institute on Drug Abuse released the "Principles of Adolescent Substance Use Disorder Treatment," summarizing previously established evidence and outlining principles of effective assessment, treatment, and aftercare for substance use disorders (SUD). Winters *et al.* (2018) updated these principles to be developmentally appropriate for adolescents. This review builds on that formative work and recommends updated adolescent assessment, treatment, and aftercare principles and practices.

Method: The Cochrane, MEDLINE-PubMed, and PsychInfo databases were searched for relevant studies with new data about adolescent substance use services. This article updates the 13 original principles; condenses the 8 original modalities into 5 practices; and highlights implications for public policy approaches, future funding, and research.

Results: Key recommendations from the principles include integrating care for co-occurring mental health disorders and SUDs, improving service accessibility including through the educational system, maintaining engagement, and addressing tension between agencies when collaborating with other youth service systems. Updates to the treatment practices include adoption of Screening, Brief Intervention and Referral to Treatment (SBIRT), investment in social programs and family involvement in treatment, expanding access to behavioral therapies and medications, increasing funding to harm reduction services, supporting reimbursement for continuing care services, and increasing investment in research.

Conclusion: These revised principles of adolescent assessment, treatment, and aftercare approaches and practices aim to establish guidance and evidence-based practices for treatment providers, while encouraging necessary support from policymakers and funding agencies to improve the standard of care for adolescent SUD services.

Key words: substance use disorders; adolescents; addiction; pharmacology; public policy

J Am Acad Child Adolesc Psychiatry 2024;■(■):■-■.

An estimated 2.2 million, or 8.5% of U.S. adolescents 12 to 17 years of age, met criteria for a substance use disorder (SUD) in 2021.[1] The majority of adults who develop SUDs first use psychoactive substances during adolescence.[2,3] By the 12th grade, nearly 1 in 3 (32.6%) adolescents report using substances in the past year.[4] Substance use during adolescence is associated with increased risk of lower academic performance, development of mood disorders, social difficulties, and even illness and death.[5-7] Adolescent substance use is a risk factor for suicidality and has potential to cause overdose and death in this population.[8,9] Despite the elevated risk of long-term negative physical, mental health, and psychosocial outcomes,[6,7,10,11] few adolescents with SUDs receive specialty care.[12] In 2021, only 3.5% of adolescents reporting an illicit drug or alcohol use disorder in the past year received treatment,[1] due in part to the lack of resources and provider expertise to identify and address substance use in this population.[13,14]

In 2014, the U.S. National Institute on Drug Abuse (NIDA) released the "Principles of Adolescent Substance Use Disorder Treatment: A Research Based Guide," which identified 13 principles aligned with existing evidence for assessment, treatment, and continuing care services for SUDs.[15] Winters *et al.* (2018)[16] further expanded these principles with additional guidance for adolescents, including summaries of evidence-based practices for adolescents recommended in the previously mentioned NIDA publication. This publication was chosen for updating due to its focus on adolescents and its contributions to operationalizing the NIDA Principles of Substance Use Disorder Treatment. This review meaningfully builds on that

formative work by Winters *et al.* by including newer research related to evidence-based principles and practices. We also offer the following: (1) updated recommendations for public policy changes aligned with the extant research to optimize widespread dissemination and implementation of evidence-based practices into routine services for adolescents with SUDs[17,18] ; and (2) research priorities to address gaps in the current evidence base.

METHOD

We conducted a focused literature review that iteratively expanded on Winters *et al.* (2018)[16] to identify the latest research pertaining to adolescent substance use services. In the process of this review, we created a detailed table outlining key articles that informed the revisions made within each "principle" or "practice" subsection. This rapid interpretive review process was more appropriate for our purposes than a full systematic review.[19] We searched the Cochrane, MEDLINE-PubMed, and PsychInfo databases for relevant published studies that provided new information on adolescent substance use assessment, treatment, and/or aftercare services, with an additional focus on updated implementation evaluation and outcomes associated with SUD-focused national initiatives since the 2018 paper. Studies had to be relevant to care provided in the United States for individuals 17 years of age and younger. Supplement 1, available online, provides details of the search strategies. Findings from the literature search were incorporated into updates of the 13 principles and 5 practices through group discussion among the authors, all of whom are experts in adolescent SUD service delivery and/or implementation.

RESULTS

We present updates to the 13 identified treatment principles (Table 1) and 5 of the 8 treatment practices (Table 2) presented in the prior review.[8] Key contributing articles to the review are highlighted in Table 3.[20-42] For all principles and practices described in this review, harm reduction strategies and resources are an integral component of an effective approach. Harm reduction recognizes that people have varied motivations for using substances, and may not desire or need abstinence to function well.[28] The goal of professional services should therefore be to promote healthy functioning and to minimize harms from substance use if and when the adolescent engages in it. Such approaches promote better outcomes for youth with SUDs or at risk, especially when tailored to patterns of use, types of substances used, and other socio-behavioral norms in this age group.[43] Furthermore, 3 treatment practices were not included as distinct practices in this review (12-Step, Therapeutic Community, and electronic-based strategies) because they were integrated within the other sections. For example, digital interventions for prevention, early intervention, and adolescent SUD treatments have been studied across various platforms including Web, game, mobile, computer/tablet-based, and virtual reality forums.[20]

Service Principles

The following revised principles (Table 1) highlight key pillars of assessment, treatment, and aftercare services for adolescent substance use. Principles are listed with the goal of providing recommendations for future research and funding opportunities to support implementation of effective interventions tailored to this population.

Principle 1: Identify and Address Substance Use as Young as Possible. Findings continue to strengthen the known association between younger age of substance use initiation and greater susceptibility to developing future SUDs.[45] Unfortunately, the use of standardized screening tools for identifying substance use problems in opportunistic settings such as pediatric, primary care, and school health remains limited.[46] Despite the existence of well-researched and user-friendly screening tools,[47,48] a lack of provider confidence, time, and education to properly recognize and address substance use have been identified as significant barriers to the widespread dissemination of screening.[14,46] Screening for problematic substance use by non-medical professionals such as probation officers, coaches, teachers, and school counselors may reach a greater number individuals.[49] However, there are limitations to using non-clinical staff to conduct screening or low-intensity interventions. Training on how to appropriately handle any safety concerns, mandated reporting issues, and when and how to involve family in discussions around risky behaviors would be necessary. Clear and practical decision guidelines for navigating challenging situations may mitigate some of these potential issues.

Investing in early intervention services including brief interventions in schools, health clinics and other settings may provide long-term health and cost benefits. A commonly cited challenge to adopting screening and brief intervention is lack of reimbursement, with primary care physicians requesting increased funds to provide these services.[14,50] Studies have demonstrated that the cost of screening and brief intervention is returned by decreasing inpatient treatment and emergency room visits costs in the adult population.[51,52] Newer digital technologies are also being developed to increase accessibility to prevention strategies and early intervention.[20]

TABLE 1 Adolescent Substance Use: Principles of Effective Care

Principle	Description	Policy supports needed	Updates from original review[16]
1. Identify and address substance use as young as possible.	Identifying and addressing adolescent substance use as soon as possible is important due to the negative effects of exposure on development. Adults with SUDs often report using substances as adolescents or young adults.	Creation of developmentally appropriate and non-carceral substance use service systems in all states, integrated with education, mental health, and primary care.	Discussion of the negative effects of early substance exposure on overall development. Newer approaches to screening.
2. Adolescents do not have to be addicted to benefit from a substance use intervention.	Youth benefit from intervention at early stages of developing substance use problems. Consideration is needed for patterns of use more frequently observed in adolescents, such as binge drinking and cannabis use, even when there is no diagnosed use disorder.	Invest in effective early intervention services, such as following up screening and assessment with brief intervention immediately when warranted. Do not require a formal SUD diagnosis for reimbursement.	Emphasis on potential benefits of brief intervention.
3. Substance use screening, comprehensive assessment, and treatment can be conducted across various settings.	Schools (including remote learning), primary care offices, emergency room settings, and general mental health settings provide opportunities for screening and comprehensive assessment to determine whether an adolescent is using substances and whether intervention is warranted. SUD treatment can be delivered across settings including home and schools.	Investment in screening and comprehensive assessment to address substance use, development of scales that address confidentiality and disclosure of substance use results in minors; and dissemination and incentivization of screening and assessment in youth.	Outline of settings that provide additional screening opportunities and expanded possibilities for treatment delivery beyond medical visits.
4. Sensitive issues should be addressed and confidentiality maintained when possible.	Maintaining confidentiality with respect to sensitive issues (eg, substance use, mental health, trauma history) is important in the therapeutic setting. However, mandated reporting in cases of abuse/neglect or notification of acute safety issues to a caregiver is legally required. Confidentiality may be further compromised by procedures for consent or electronic care records.	Development and promotion of strategies for balancing adolescent confidentiality with family involvement; and investment in research to identify guidelines for confidentiality related to substance use and related behavioral issues.	Discussion of need for confidentiality in electronic health records, and issues with managing confidentiality and consent in screening and treating adolescent populations.

(continued)

TABLE 1 Continued

Principle	Description	Policy supports needed	Updates from original review[16]
5. Treatment should be tailored to the adolescent's needs.	Many developmental factors need to be considered when creating a treatment plan for an adolescent, including cognitive maturity, adolescent-specific challenges to recovery (eg, peer, family, and school issues), and inclusive services.	Invest in research to develop and implement guidelines for treatment levels of care and best practices that align with levels.	Developmental period and other adolescent-specific factors when creating treatment plans.
6. Treatment should not focus on just substance use.	Treatment should incorporate other needs, such as co-occurring mental health disorders, housing, medical, social, and legal issues, as well as be provided through a lens of harm reduction without focus only on abstinence or sobriety.	Invest in research on treatments for co-occurring disorders and holistic programs that address psychosocial needs; support treatment focused on a harm reduction approach.	Inclusion of harm reduction principles in the consideration of nontraditional treatment approaches.
7. Adolescents presenting with concerning substance use should be tested and treated for STIs and hepatitis B and C and should be offered contraceptive resources and STI preventive care.	Adolescent substance use increases risk for sexually transmitted and bloodborne diseases (eg, HIV, hepatitis B and C) and pregnancy. Treatment can help decrease high-risk behaviors, thereby reducing the likelihood of infection and unintended pregnancies.	Clinics that serve adolescents need supports for STI screening and referral for appropriate treatment, as well as preventive care and contraception.	Principle focuses on testing for STIs, pregnancy, and other bloodborne diseases as part of reducing additional high-risk behaviors for adolescents struggling with substance use.
8. Behavioral therapies are an essential part of SUD treatment.	Substance use behaviors can be understood and treated using the same learning principles as any other human behavior. Behavioral therapies help build motivation to change by providing incentives for treatment goals, teach skills to address factors such as cravings or contextual antecedents, and identify positive and rewarding activities.	Support research examining dissemination and implementation of evidence-based therapies and evaluation of treatment sustainment and fidelity in routine care settings; financially support the adoption and use of evidence-based therapies in community treatment settings.	Less emphasis on abstinence and 12-Step–based treatment for youth. Inclusion of contingency management.
9. Family and community support are important features of treatment.	Most evidence-based services for adolescent substance use involve family members and individuals in the youth's community. These services try to improve	Reorganize substance use services (and how they are funded) to make involvement of family and other supports central.	Update on necessary policy changes for provider reimbursement to offer family- and community-based services.

(continued)

TABLE 1 Continued

Principle	Description	Policy supports needed	Updates from original review[16]
	family communication and provide the adolescent with support.		
10. Mental health conditions need to be addressed to effectively treat substance use.	Adolescents with a substance use disorder often have co-occurring mental health conditions. Simultaneous integration of treatment is crucial for successful outcomes.	Support elimination of siloes between mental health and substance use services. Consider integration requirements for access to federal and state funds. Evaluate current efforts underway to integrate behavioral health care to meet the needs of adolescents.	Identification of racial and ethnic disparities around access to co-occurring disorder treatment. Emphasis on need for integration of services.
11. External pressures may influence an adolescent's involvement in treatment.	Most adolescents with an SUD do not think they need treatment and rarely seek services. The juvenile justice system has become a primary de facto system for engaging youth in substance use services, but early interventions that bypass justice involvement would have lower risks of harm.	Support lowering the age of consent for substance use services and make the services easily accessible, non-punitive, and confidential.	Greater emphasis on approaches to address barriers in accessibility and interfacing with the juvenile justice system. Greater emphasis on youth autonomy rather than pressuring them to engage in treatment.
12. Substance use should be monitored during treatment and inform adaptations made to treatment programming.	It is important to monitor an adolescent's substance use while in treatment and identify return to use early. The return to use could indicate that treatment should be intensified or altered to better meet the adolescent's needs.	Support development and dissemination of pragmatic methods for monitoring treatment progress.	Focus on the need for continued development of adolescent progress monitoring tools.
13. Having a continuing care plan with ongoing recovery monitoring and support is important.	Matching the duration of treatment with adolescents' needs can help avoid unnecessary costs and repeat treatment episodes. Even adolescents who do not complete treatment can benefit from ongoing continuing care monitoring and recovery support, and re-intervention if needed.	Permit reimbursement for continuing care and recovery support services; invest in research to further explore patient level of functioning matching to optimal monitoring and support duration.	Discussion around the barriers for continuing care monitoring.

***Note**: Adapted from: U.S. National Institute on Drug Abuse (NIDA), 2014,[15] and Winters et al., 2018.[16] STI = sexually transmitted infection; SUD = substance use disorder.*

TABLE 2 Adolescent Substance Use: Evidence-Based Practices

Practices	Description	Updates from original review[16]
1. Motivational interviewing (MI) + Screening, Brief Intervention, Referral to Treatment (SBIRT)	MI uses a person-centered, nonconfrontational style in assisting youth in exploration of different facets of their substance use patterns. SBIRT is a packaged intervention that identifies substance use and encourages treatment for those who meet criteria. Brief intervention often consists of educational services that aim to help the adolescent recognize the negative consequences of substance use.	Inclusion of SBIRT.
2. Family-based services	Family-based approaches seek to reduce an adolescent's use of substances and promote healthy family functioning by addressing the mediating family risk factors, such as poor family communication.	Update on evidence for effectiveness and determinants of implementation (including reimbursement).
3. Behavior therapies: cognitive–behavioral therapy, contingency management	Cognitive–behavioral therapy encourages adolescents to develop self-regulation and coping skills by teaching youth to identify stimulus cues that precede substance use, to use various strategies to avoid situations that may trigger the desire to use, and to develop skills for communication and problem solving. Contingency management is based on operant conditioning and uses rewards to reinforce desirable behaviors such as treatment attendance or use reduction.	Combined behavior and cognitive–behavior therapies into a single practice; explicit inclusion of contingency management.
4. Pharmacotherapy	This treatment approach uses medication to address various aspects of addiction, including craving reduction, abstinence promotion, relapse prevention, and withdrawal symptom management. Buprenorphine is the only FDA-approved medication to treat a substance use disorder in adolescents. Harm reduction resources such as naloxone and fentanyl test strips can be used to reduce the risk of overdose.	Emphasis on buprenorphine, naloxone, and other harm reduction practices.
5. Continuing care and recovery monitoring, support, and re-intervention	Encourage the use of ongoing coordination of treatment and recovery needs. Support the use of mutual support groups, peer specialists, sponsorship, clubhouse communities, and recovery schools.	Addition as a new practice that was not discussed in Winters *et al.* (2018)[16]
Updates across all practices	N/A	Integrated 3 practices (12-Step, therapeutic community, electronic and Web-based) throughout the other practices, rather than listing separately.

Note: Adapted from: U.S. National Institute on Drug Abuse (NIDA), 2014,[15] and Winters et al., 2018.[16] Electronic and Web-based therapy was removed from Winters et al., 2018,[16] as these therapies can be integrated with any of the evidence-based practices described above. Note: FDA = U.S. Food and Drug Administration; MI = motivational interviewing; NA = not applicable; SBIRT= Screening, Brief Intervention, Referral to Treatment.

Principle 2: Adolescents Do Not Have to Be Addicted to Benefit From a Substance Use Intervention. SUDs are defined on a continuum, and adolescents with levels of use not yet meeting threshold for a use disorder can still benefit from intervention. A brief intervention, such as personalized feedback through a motivational interviewing (MI)

TABLE 3 Summary of Key Contributing Articles

Associated principles and practices[a]	Year	Article type	Objectives	Main outcomes	First author, reference
Principle 1. Identify and address substance use as young as possible.	2023	Narrative review	Summarize digital interventions for adolescent substance use.	Urgent need for additional digital interventions that focus on prevention and harm reduction in youth.	Monarque[20]
Principle 2. Adolescents do not have to be addicted to benefit from a substance use intervention.	2023	Narrative review	Update on SBIRT and management of cannabis use in youth.	SBIRT can be used in multiple settings. Brief intervention has modest, short-term effects on cannabis use in youth.	Calihan[21]
Principle 3. Substance use screening, comprehensive assessment, and treatment can be conducted across various settings.	2022	Narrative review	Identify when and how SBI is being paid for, avenues for providing SBI in schools and communities, and payment strategies for sustainable SBI programs.	SBI is paid primarily through grant funds, public services, and commercial insurance. SBI is now expanding beyond healthcare-specific settings.	Reif[44]
Principle 3. Substance use screening, comprehensive assessment, and treatment can be conducted across various settings.	2022	Narrative review	Review best practices, evidence, and expert opinion for the use of telehealth services across diagnoses in adolescents and young adults.	Telehealth systems need to adequately address confidentiality. There are limited data on how youth engage in virtual delivery of substance use care.	Heinrich[22]
Principle 4. Sensitive issues should be addressed, and confidentiality maintained when possible.	2022	Narrative review	Review laws and standard practice applicable to confidentiality and consent in the treatment of adolescents.	Confidentiality laws vary by state. Adolescents are more likely to disclose when care is confidential. Involvement of caregivers is important for treatment of health issues.	Mientkiewicz[23]
Principle 4. Sensitive issues should be addressed, and confidentiality maintained when possible.	2017	Empirical research	Evaluate practice of Massachusetts primary care physicians following distribution of an SBIRT toolkit.	Screening practices improved, but insufficient knowledge, lack of time, and lack of staff resources were identified barriers.	Levy[24]
Principle 5. Treatment should be tailored to the adolescent's needs.	2020	Empirical research	Build evidence base and guidance for adaptive protocols for adolescent substance use treatment.	Adaptive protocols outperformed the static protocols and can be used to guide level of care placement decisions based on adolescent needs.	Agniel[25]

(*continued*)

TABLE 3 Continued

Associated principles and practices[a]	Year	Article type	Objectives	Main outcomes	First author, reference
Principle 5. Treatment should be tailored to the adolescent's needs.	2021	Empirical research	Describe characteristics and outcomes of youth seen in a primary care-based outpatient program for substance use.	Retention of adolescents and young adults receiving substance use care within primary care is highest when care is flexible, anticipates treatment of co-occurring mental health disorders, and uses re-engagement strategies.	Bagley[26]
Principle 6. Treatment should not focus on just substance use.	2018	Empirical research	Highlight high prevalence of social determinants of health in youth seeking substance use and mental health treatment.	Treatment seeking youth have high percentage (80%) of social determinants of health concerns in at least one domain. Integrative services should be accessible to these groups.	Settipani[27]
Principle 6: Treatment should not focus on just substance use	2022	Narrative review	Describe strategies for integrating harm reduction into clinical settings in ways that are developmentally appropriate for youth.	Traditional, prevention-focused strategies should not be the only options for adolescents. Patient-centered harm reduction approaches should be tailored toward adolescents.	Winer[28]
Principle 7. Adolescents presenting with concerning substance use should be tested and treated for sexually transmitted infections and be offered contraceptive resources.	2019	Systematic review	Providing guidance for research, policy, and practice addressing substance use and HIV in youth involved in the justice system.	Research in this area is limited; future studies should use approaches such as longer follow-up periods, biomedical HIV prevention, and implementation of evidence-based interventions.	Tolou-Shams[29]
Principle 8. Behavioral therapies are an essential part of substance use disorder treatment. **Practice 3.** Behavior therapies: cognitive– behavioral therapy, contingency management	2019	Narrative review	Summarize evidence-based strategies, supplemental interventions, and other improvements to treatment approaches for adolescent SUDs.	Family-based therapies and cognitive–behavioral therapy are well-established interventions. Exercise, yoga, and mindfulness are possible adjunctive interventions.	Fadus[30]

(*continued*)

TABLE 3 Continued

Associated principles and practices[a]	Year	Article type	Objectives	Main outcomes	First author, reference
Principle 8. Behavioral therapies are an essential part of substance use disorder treatment.	2022	Empirical research	Enhance understanding of effective financing strategies, reach, and sustainment of evidence-based practices for adolescent SUDs.	Framework is outlined for how to compare state- vs organization-focused grants on implementation of an evidence-based behavior therapy for adolescent SUD.	Dopp[31]
Principle 9. Family and community support are important features of treatment.	2022	Commentary	Highlight how financing issues can impede family-inclusive interventions.	Collaboration between health systems and financers is necessary to implement immediate and long-term changes in delivery and payment of SUD treatment.	Dopp[32]
Principle 10. Mental health conditions need to be addressed to effectively treat substance use.	2021	Empirical research	Evaluate prevalence and treatment disparities of co-occurring SUDs and major depressive disorder in adolescents.	Unmet treatment needs were significantly higher in certain minority groups and uninsured individuals. Expanded treatment services for adolescents with co-occurring conditions and increased support through funding and policy is needed.	Lu[33]
Principle 10. Mental health conditions need to be addressed to effectively treat substance use.	2017	Narrative review	Review research on treatments targeted to adolescents with SUDs.	The most effective programs are individually tailored and integrate services for dual diagnoses and behavioral and family-based interventions, MI, and CM.	Brewer[34]
Principle 11. External pressures may influence an adolescent's involvement in treatment.	2022	Narrative review	Summarize privacy and consent laws for adolescents in each state and discuss their impact.	Consent and privacy laws are highly variable among states, and often do not reflect standards of care for youth.	Sharko[35]
Principle 12. Substance use should be monitored during treatment and inform adaptations made to treatment programming.	2021	Narrative review	Examine evidence for continuing care for SUDs, focusing on efficacy, moderators, mechanisms of action, and economic impact.	Continuing care for adolescents with SUD has generally favorable results.	McKay[36]

(*continued*)

TABLE 3 Continued

Associated principles and practices[a]	Year	Article type	Objectives	Main outcomes	First author, reference
Principle 13. Having a continuing care plan with ongoing recovery monitoring and support is important.					
Practice 1. Motivational interviewing + screening, brief intervention and referral to treatment	2023	Narrative review	Describe the efficacy of brief interventions for adolescents with problematic cannabis use.	Brief interventions including MI, decisional balance exercises, and goal setting can be effective when treating adolescent cannabis use if paired with referral to more services as needed.	Winters[37]
Practice 1. Motivational treatment	2021	Empirical research	Investigate use of SBIRT by US pediatricians, and identify barriers associated with use in providers and practices.	Most pediatricians deliver some components of SBIRT, but confidentiality and time are common barriers to delivering the full model.	Hammond[38]
Practice 2. Family-based services	2018	Systematic review	Review evidence for outpatient behavioral treatments for adolescent substance use.	Ecological family-based treatment, and individual and group cognitive—behavioral therapy remain well-established treatment approaches. Technology-delivered assessment and direct-to-consumer marketing strategies may help to reduce the gap in treatment access.	Hogue[39]
Practice 3. Behavior therapies: cognitive— behavioral therapy, contingency management	2019	Narrative review	Review the efficacy of CM for SUDs in youth.	CM is an effective strategy to promote abstinence and to increase treatment attendance in youth with SUDs.	Stanger[40]

(*continued*)

TABLE 3 Continued

Associated principles and practices[a]	Year	Article type	Objectives	Main outcomes	First author, reference
Practice 4. Pharmacotherapy	2019	Narrative review	Evaluate the efficacy of pharmacological approaches to SUDs in youth.	Buprenorphine is the only FDA-approved medication for SUD in adolescents. Off- label use of pharmacotherapy can be an effective way to treat SUDs in youth, but more research is needed before FDA approval can be granted for use in this population.	Squeglia[41]
Practice 5. Continuing care and recovery monitoring, support, and re-intervention	2022	Empirical research	Investigate the relationship between frequency of VRSA implementation and remission rates for adolescent substance use.	When compared to services as usual, high adherence to VRSA implementation encouraged higher rates of remission in adolescent groups.	Godley[43]

Note: [a]*The principles and practices listed in this table are detailed in Tables 1 and 2, respectively. CM = contingency management; FDA = U.S. Food and Drug Administration; MI = motivational interviewing; SBI = screening and brief intervention; SBIRT = Screening, Brief Intervention, Referral to Treatment; SUD = substance use disorder; VRSA = Volunteer Recovery Support for Adolescents.*

mework, is endorsed by the American Academy of Pediatrics and continues to be an effective tool for reducing substance use–related problems in adolescents.[53,54] Early intervention approaches organized around the Screening, Brief Intervention, Referral to Treatment (SBIRT) model have demonstrated efficacy in improving substance use outcomes and provide a vehicle for increased use of screening and behavior change strategies for youth who use substances.[55-57]

More formal treatment such as psychotherapeutic and pharmacologic interventions may also benefit adolescents who are engaging in risky patterns of use with less perceived harm, often associated with occasional binge drinking or (increasingly) cannabis use, or who have a history of negative consequences such as opioid overdose, regardless of official diagnosis.[58-60] Insurance and health care organizations could benefit youth and families by offering appropriate and timely reimbursement for early intervention services in adolescents without requiring a formal SUD diagnosis.

Principle 3: Substance Use Screening, Comprehensive Assessment, and Treatment Can be Conducted Across Various Settings. Substance use screening, assessment, and treatment can be performed in a variety of settings including primary care and mental health offices, emergency rooms, schools, and other community-based programs. Providing such services in different environments offers early intervention opportunities.[55] Screening results suggestive of problematic use should be followed by a comprehensive assessment.[61] Treatment can also be delivered in nonclinical venues such as at home, at school, or virtually, all of which can be a more comfortable experience for youth.[62-64] For example, contingency management based on academic performance has demonstrated promising results in school settings for adolescents in need of substance use treatment.[62]

The establishment of substance use service systems that are developmentally appropriate and integrated within educational, mental health, and primary care services is necessary to identify and provide treatment to adolescents without necessitating involvement in the justice system. For those youth who may be engaged in heavier use or already experiencing an SUD, the juvenile justice system is often a main driver of engagement in formal addiction services.[65,66] Schools that deliver screening and brief interventions may not be reimbursed for these services,[44] creating a barrier to its widespread implementation in educational settings. Allowances for schools to receive reimbursement for screening and brief intervention services would incentivize educators to play an important role in early intervention. Research is

also needed into the development of comprehensive assessment instruments that can be implemented across settings including telehealth, with sensitivity to confidentiality issues posed in each setting, so practitioners have the tools to address various patterns of substance use in this population.[22]

Principle 4: Sensitive Issues Should Be Addressed and Confidentiality Maintained When Possible. Maintaining confidentiality in the discussion of sensitive issues with adolescents such as substance use, mental health, or trauma is critical in the therapeutic setting. Adolescents can consent for their own SUD-related care in many states and are protected by federal confidentiality laws.[67] Adolescents are also more likely to discuss their substance use history if caregivers are not a part of this conversation,[68] although many service providers have these discussions with parents present.[24] The rise of the electronic health record (her) has created other challenges to maintaining adolescent confidentiality, as caregivers may have access to this information if not properly charted or restricted from their view.[67]

The development and dissemination of best practices for involving family members in services while also maintaining autonomy of the adolescent to promote self-disclosure is needed for favorable outcomes. Future research into guidelines for addressing confidentiality, particularly how to handle non–mandated-reporting health behaviors and topics that may be necessary to disclose to parents, will help providers make educated decisions about disclosing substance use.

Principle 5: Treatment Should Be Tailored to the Adolescent's Needs. Substance use treatment should be personalized to fit the needs of this age group. Developmental considerations for tailoring treatment to adolescents compared to adults need to include the following at a minimum: (1) tailoring treatment goals sensitive to the adolescent's cognitive maturity, which trend toward concrete thinking due to still-developing abstract thinking abilities[69]; (2) addressing school–specific challenges to maintaining recovery such as academic difficulties or social environments that encourage substance use; (3) addressing parent and sibling issues; and (4) providing skills to deal with peer influences. The importance of making treatment developmentally appropriate should not be overshadowed by the unfortunate reality that too few substance use programs provide services tailored to adolescents.[13] For example, it is estimated that, in 2020, only 23.8% of treatment programs reported providing adolescent-specific programming.[13]

When specialty services are accessed, there are still disparities in the delivery of evidence-based treatment.[70] For example, the use of medication for opioid use disorder in adolescents is minimal despite endorsement by medical societies.[70-72] Research on pharmacotherapy for the treatment of other substances such as alcohol, cannabis, and nicotine use is also limited in the adolescent population.[41] Policy supports are needed to fill nationwide gaps in adolescent-specific treatment and to provide inclusive and culturally sensitive care.[73] Additional research is necessary to create appropriate treatment guidelines for levels of care. For example, the American Society of Addiction Medicine (ASAM) criteria's multidimensional assessment for levels of addiction care are not well understood when applied to adolescents.[74,75] There is also a need to train additional providers to reduce stigma and to use medications for addiction treatment in this population.[26,76]

Principle 6: Treatment Should Not Focus on Just Substance Use. Adolescents with SUDs often have psychosocial challenges including higher rates of school attrition, unstable housing, neighborhood disadvantage, and poverty.[77] Legal issues are common in individuals with SUDs,[65] and vulnerabilities such as unstable housing increase the risk of future substance use–related problems in adolescents more than their adult counterparts.[78] Comprehensive assessment of social determinants of health should be incorporated into SUD care. Access to supports to address these factors are a necessary component of treatment.

Providing supports for harm reduction training and materials are also needed to minimize negative consequences of substance use, given that an adolescent may not desire or need to become entirely abstinent from substance use to function well.[28] To date, little is known about the prevalence of adolescent treatment programs using harm reduction approaches or abstinence-based treatment programs acknowledging realistic harm reduction goals for their clients.

Principle 7: Adolescents Presenting With Concerning Substance Use Should Be Tested and Treated for Sexually Transmitted Infections (STIs) and Hepatitis B and C, and Offered Contraceptive Resources and STI Preventive Care. There is a strong association between substance use and high-risk sexual behaviors such as multiple sex partners and unsafe sexual activities.[79-81] Substance use among justice-involved youth is related to HIV risk behaviors including unreliable condom use, increased number of sex partners, and increased probability of contracting sexually transmitted infections (STIs).[29] Adolescents who use intravenous drugs require screening for other bloodborne pathogens including hepatitis B and C.[82] Substance use is also

associated with unintended pregnancies, suboptimal pregnancy care, and negative fetal consequences.[83,84] Adolescents who screen positive for substance use must be provided STI and bloodborne infection screening/treatment and contraceptive resources or referrals.[83,84]

Adolescents who use substances often do not receive appropriate access to contraceptive resources and STI-preventive care such as Papanicolaou (Pap) tests or human papillomavirus vaccines.[83] Provider-level barriers such as lack of training in sexual health services, and patient-level barriers such as intimate partner violence and competing priorities, reduce access to and engagement in sexual health services.[83,85] SUD service environments need to be equipped to properly screen patients and to provide appropriate resources or referrals for addressing STIs and contraceptive guidance. Regulatory policies should require that such services be available to all adolescent patients.

Principle 8: Behavioral Therapies Are an Essential Part of SUD Treatment. Cognitive–behavioral therapy (CBT), alone or in combination with motivational enhancement therapy (MET) and contingency management (CM), has strong supporting evidence for treating substance use in adolescents.[86,87] Culturally accommodated CBT programs have shown promising results in SUD treatment for youth.[87] CBT plus motivation-based therapies have also demonstrated notable utility in adolescents with co-occurring disorders.[88,89] CM uses operant conditioning to modify behavior and is an effective supplement to CBT, MET, and family-based therapies as treatment for SUDs in adolescents.[87]

Further attention by leaders in the field is needed to increase dissemination and implementation of effective behavioral therapies into community treatment settings. Federal and state investment in the adoption and use of in-person and virtual behavioral interventions would be a strong investment to improve quality of care in community-based treatment settings.[20,31,90-92] Current research is being conducted to determine effective implementation strategies of evidence-based SUD treatment into community settings for adolescents.[31,93]

Principle 9: Family and Community Support Are Important Features of Treatment. Family, peer, and community supports are a critical part of SUD treatment and aftercare. The family plays a central role in adolescent development, and many protective and risk factors for substance use involve familial relations.[94] Adolescents are at greater risk for developing SUDs or misusing substances when there is peer pressure or peers who use, respectively.[95,96] Community-based recovery organizations with peer-based recovery support services are effective aids for substance use in the adult population that could be a useful service modality for adolescents.[97]

Family and other support systems need to play a central role in services and should be adequately reflected in federal funding. Enhanced reimbursement for evidence-based family services and creation of billing codes that incentivize family involvement would make these treatments more accessible in all age groups.[32,98] Policy-level interventions have the ability to reform SUD treatment programs to prioritize family and community level outcomes.[32] Programs would also benefit from the development of guidelines that outline and promote the use of family screening, family self-referral, and integrating family member self-care mechanisms into recovery support.[98]

Principle 10: Mental Health Conditions Need to Be Addressed to Effectively Treat Substance Use. Adolescents presenting for SUD treatment often have high rates of mental disorders.[99] Those with co-occurring disorders have unique treatment needs that may diverge from those of individuals who have SUD diagnoses alone.[100,101] The presence of co-occurring disorders is associated with high-risk sexual behaviors, more frequent substance use, and suicide attempts in the adolescent population.[102-104] Treatment for co-occurring disorders is associated with better substance use outcomes compared to when treatment focuses only on substance use[105]; yet most adolescents with a major depressive episode and SUD receive treatment for only one condition.[1] Minority racial and ethnic groups with co-occurring disorders also receive treatment at a lower prevalence than White individuals regardless of age.[106,107] Service systems need to invest in the development of comprehensive programs that assess and provide treatment for co-occurring disorders and address psychosocial needs driven by social and non-social (eg, biological) influences on health.[27] An estimated 44.6% of facilities that offer substance use treatment do not have services tailored to individuals with co-occurring mental disorders.[13]

Treatment integration for co-occurring mental disorders and SUDs requires federal and state supports to remove separations between related service systems, to create and enforce treatment integration requirements, and to assess the progress of existing integrated services. The simultaneous treatment of co-occurring conditions is recommended[34]; yet many adolescents do not receive integrated care.[1,107] State and local policies need to be revised to eliminate obstacles to treatment access for individuals with co-occurring disorders.[108] The shift in some education programs to train service providers in integrated behavioral health is a step in the right direction, but this trend is not the norm in most counselor training programs.

Unfortunately, the number of providers trained to treat adolescent SUDs is limited. For example, adolescent SUD treatment falls at the intersection of 2 subspecialties in psychiatry, and there are very few providers that have training in both areas. More addictions training in child psychiatry and allied fields (eg, clinical psychology, social work, family medicine) is needed to expand access to specialized services tailored to the unique needs and challenges of this population.[109] Also, support and funding are necessary to aid in the progress evaluation of integrated treatment services. Increased funding for programs for trainees that incorporate incentives such as loan forgiveness may also encourage further training in subspeciality areas.

Principle 11: External Pressures May Positively Influence an Adolescent's Involvement in Treatment. An estimated 98.6% of adolescents with an untreated SUD reported believing that they did not need substance use treatment, based on a recent national survey.[1] This lack of perceived need for treatment presents a barrier to seeking care in this population. Nearly 80% of adolescents sentenced for a drug offense have an SUD,[110] at which point legal and/or family pressure can be leveraged to encourage treatment participation. However, consistent with Principles 1 and 2, earlier intervention is preferable and can facilitate the role of trusted adults to encourage the adolescent to seek treatment.

Prompt identification of SUDs with efficient entry into treatment may be affected by the state variability that exists in age of consent and privacy protection for substance use treatment in the adolescent population.[111] Lowered age of consent to care may be helpful across all settings, and particularly in school-based programs, where many youth who do not self-identify with an SUD want to speak with a counselor. School-based counselors can screen or assess for SUD issues and respond with confidential SUD counseling if the youth is at least 12 years of age.[112] Past research has identified some school programs reporting reductions in gender disparities among youths accessing services when compared to community specialty clinics that are typically skewed toward male patients.[112] The value of establishing universal confidentiality and an appropriate age for adolescents to consent for substance use treatment is worthy of federal legislative debate and inquiry, as current differences among states may be impinging on access by youth to needed resources or on professionals' ability to collaborate (eg, when age of consent differs for SUD vs mental health care).

Principle 12: Substance Use Should Be Monitored During Treatment and Inform Adaptations Made to Treatment Programming. Treatment programs need to include mechanisms to monitor how well evidence-based practices are implemented, the frequency with which adolescents attend sessions, and the frequency of adolescents' substance use. It is important to know whether or not services are delivered with fidelity and adherence to the model in order to provide high-quality care in a way that has been tied to positive outcomes through research. Equally important is the need to determine whether adolescents are responding to services, by tracking attendance and substance use patterns.[113] Treatment providers must individualize and adapt treatment plans based on this information to deliver services that match the severity of substance use symptoms, including content, in-person or remote settings, and duration of care.[113,114]

Commonly used substance use monitoring instruments for adolescents such as the Timeline Followback,[115,116] Teen Addiction Severity Index,[117] and Comprehensive Adolescent Severity Inventory[118] can be used in conjunction with urine drug screening. Drug testing can be valuable as a means to monitor for medication adherence,[119] to evaluate for substance use in real time, and as a component of the CM treatment approach. However, care must be taken to use the results for therapeutic purposes only (eg, they should not be shared with juvenile justice system representatives except by informed consent of the adolescent). Support for research regarding the implementation of adolescent progress monitoring tools is needed to identify the minimum necessary frequency and duration of use to balance feasibility with effectiveness. Despite their effectiveness in this population, additional support for widespread distribution of adolescent progress monitoring tools and protocols is needed.

Principle 13: Having a Continuing Care Plan With Ongoing Recovery Monitoring and Support Is Important. Although the need for continuing care monitoring, recovery support, and early re-intervention is widely recognized, factors such as stigma and lack of research funding work against well-accepted continuing care protocols for SUD.[120] Research indicates that adolescents who do not complete the recommended course of services typically return to substance use soon after discharge. However, continuing care monitoring, support, and re-intervention have demonstrated effectiveness for youth regardless of treatment completion status.[121]

Further funding is needed to investigate ideal care continuation planning for adolescents regardless of discharge status. For example, the ASAM adolescent criteria can benefit from rigorous testing to establish its value as a level of care system in adolescents. More detailed guidance is needed to adapt the intensity and duration of treatment and to link adolescents to ongoing recovery support after

any discharge status from acute care. This may help to avoid unnecessary costs, avoid repeat treatment episodes, and increase responsiveness to a patient's current SUD status and needs.[113] Unlike disease management interventions in health care, provider reimbursement for SUD continuing care services, including peer recovery support, is almost nonexistent. Federal and state leadership is needed to implement provider reimbursement plans that incentivize continuing care services for adolescents with less symptomatic to severe SUDs and to support evidence-based models as they are developed and tested.

Evidence-Based Practices

The following revised practices for adolescent substance use services (Table 2) demonstrate the utility of evidence-based assessment, treatment, and continuing care approaches and strategies with the goal of establishing best practices for providers and service systems working with adolescents who use substances.

Practice 1: Motivational Interviewing + Screening, Brief Intervention and Referral to Treatment. Motivational interviewing (MI) can be delivered as a combined intervention or as a stand-alone component. Screening, Brief Intervention, Referral to Treatment (SBIRT), often using MI as its core counseling approach, has demonstrated the potential to reach much of the adolescent population, as it can be used in a multitude of settings.[55,122] The promotion of SBIRT has increased the use of screening, validated tools, and preventive messaging in mental health and primary care environments.[55] MI as a standalone intervention has demonstrated significant improvement in adolescent substance use outcomes.[122,123] Significant effect sizes observed post-treatment indicate that MI retains effectiveness over a variety of time periods.[123] MI has also shown success with different substance use behaviors, delivery settings, and session lengths.[123] Brief intervention consists of personalized feedback aimed to create a deeper understanding of the negative consequences associated with substance use and to increase motivation for change. The inclusion of brief intervention strategies have been shown to improve mental health and substance use outcomes in adolescents.[37,124,125]

Barriers to widespread implementation of MI and SBIRT remain, despite a growing evidence base. Treatment providers have reported challenges including a limited time with patients, issues with confidentiality, limited knowledge of substance use screening and treatment, and reimbursement concerns.[38,126,127] Investments in effective implementation strategies to boost the adoption of MI are needed in settings specific to adolescents.

Practice 2: Family-Based Services. As discussed in Principle 9, active involvement of family in SUD services contributes to improved outcomes.[98] Family-based therapies have a strong evidence base and are used to target risk factors associated with substance use.[128] Evidence-based strategies within family-based therapies often include behavioral management, parental monitoring, promotion of close and nurturing familial relationships, stress management, and encouraging self-regulation.[129]

Despite a vast literature showing that family-based services produce favorable results on adolescent substance use,[130] there are a number of barriers to widespread implementation. Reimbursement would incentivize systems to screen families and to involve peer family advocates to increase engagement in care. Better systems are needed that use clinical family assessments, involve family in the delivery of intervention techniques and recovery management strategies in remote and clinic-based settings, and encourage self-care for family members who are struggling with substance use.[98] Finally, treating adolescent SUDs presents a challenge because clinicians often must navigate differences between youth and their caregivers regarding their motivations for treatment and desired outcomes. Promoting within-family alignment and shared goals requires specialized training, as described under Principle 10.

Practice 3: Behavior Therapies: Cognitive–Behavioral Therapy, Contingency Management. CBT centers on encouraging adolescents to develop self-regulation, coping skills, communication, and problem-solving. Previous research has identified CBT as one of the most successful treatment strategies in reducing adolescent substance use and improving outcomes.[39,86,87,130] CM, which is based on operant conditioning, uses reinforcers to promote and increase desirable behaviors, such as treatment attendance or reduction of use. The approach pre-specifies desired and functionally effective behaviors, monitors the behaviors through a planned schedule, and reinforces the desired behaviors through incentives.[87,131] CM has also demonstrated favorable outcomes in treatment by reducing substance use and enhancing treatment retention.[92,131] CM is simple to teach, affordable, and can easily be integrated with other practices.[92]

Programs need additional support to provide consistent and accessible behavioral interventions that are culturally sensitive. Programs should also have separate evaluation outcomes that reflect the population served, focusing not only on substance use reduction but also functional outcomes such as school attendance and community engagement. Federal supports are needed for CM implementation

into adolescent substance use treatment, similar to their adult counterparts.[132]

Practice 4: Pharmacotherapy. Pharmacotherapy for addiction uses medication to address aspects of substance use such as craving reduction and treatment of underlying psychiatric disorders. The only addiction medication with pediatric approval by the U.S. Food and Drug Administration (FDA) is buprenorphine, which is approved for the treatment of opioid use disorder in individuals 16 years of age and older.[133] The majority of medications for alcohol and nicotine use disorders are prescribed off label,[41] although this is broadly true in pediatric medicine and is not unique to adolescent substance use treatment.[134]

Increased funding for pharmacologic research focused on adolescent substance use and FDA approvals for young populations is crucial. Support for implementation, dissemination, and training pertaining to medications such as buprenorphine and other future FDA-approved treatments for adolescents is needed. Training of primary care clinicians is also necessary to effectively utilize medication for addiction treatment, including expanding virtual treatment options for adolescents with SUDs.[63]

Practice 5: Continuing Care and Recovery Monitoring, Support, and Re-Intervention. Assertive approaches to increasing linkage to continuing care, providing ongoing support to engage in prosocial activities and relationships, and rapid initiation of services post discharge makes a difference in preventing return to use and reducing substance use harm.[42,135,136] Although there is greater research regarding adult involvement in mutual support groups (eg, 12-Step), data for adolescents are encouraging. Attendance has been associated with lower rates of substance use, higher amounts of recovery capital, and reduced medical costs.[137] However, caution is warranted when referring adolescents to these groups, because adolescent-focused meetings are rare and meetings populated by older adults may or may not be equally welcoming, safe, and supportive of youth. In addition, not all 12-Step concepts align with youth beliefs (eg, accepting the need for lifelong abstinence). Other services such as recovery coaches, residences, schools, and social clubs are growing and can both support and facilitate recovery, but are less studied in this population.

Strategies such as the use of motivational incentives and automated mobile health interventions support continuous assessment to ensure that patients receive adequate recovery support as their needs change over time. More rigorous research is needed on all models addressing adolescent populations. Such models include dissemination research, implementation research, and cost-effectiveness research of rapid initiation and sustained continuing care for youth transitioning from controlled environments (eg, childcare institutions, juvenile justice detention or incarceration) to the community. Increased funding for harm reduction services will be crucial to make these resources continuously available to adolescents.

DISCUSSION

Successful management of adolescent substance use is grounded in the early identification of substance use problems and initiation of treatment to improve long-term outcomes. This article highlights the need for identifying and treating substance use as young as possible; not limiting interventions to adolescents with a current diagnosable SUD; conducting evidence-based screenings, assessments, and treatment across a wide variety of in-person and virtual settings to improve service accessibility and engagement; and recognizing the tension between benefits and risks of collaborating with other youth systems (eg, juvenile justice, schools). There is a need for enhanced strategies to deliver effective and developmentally appropriate treatment that addresses co-occurring mental health disorders, understands the influence of legal or family pressure on treatment involvement, monitors substance use during care, and establishes continuing care plans.

Similar to the original work by Winters *et al.*,[16] behavioral therapies as well as family and community supports are still essential components of adolescent SUD services. Additional state and federal funding for harm reduction services, social programs, screening, research, and other organizations working to increase access to resources for adolescents is crucial. Dissemination and implementation science offers strategies to support provider, policy, and system changes needed to increase the availability of evidence-based practices for adolescents. It also highlights the need to adapt and to evaluate the fit and effectiveness of each practice within local contexts to ensure culturally responsive care. Limitations of this review include potential for bias due to the manual selection process of articles to include, as well as reliance on a limited number of databases to select publications.

Needs and directions for future research include the establishment of adolescent-specific service systems outside of the justice system, development of comprehensive assessment instruments, guidelines for addressing complex confidentiality issues, implementation of progress monitoring tools, adaptive continuing care approaches, research on effective medications to treat substance use in adolescents, and investigation of recovery supports specific to adolescent groups. The use of remote, virtual interventions

and self-directed Web apps are emerging practices and strategies that merit research attention. Furthermore, we recommend that the NIDA principles of substance use treatment should be separately updated or expanded for adults and transitional-aged youth,[15] to highlight developmental differences and to promote consistent but tailored application of principles across the lifespan.

These revised principles and practices recommend current best approaches for service providers and systems, while highlighting aspects of the standard of care for adolescents with SUDs. Evidence-based assessment, treatment, and continuing care practices are essential components of care to reduce the negative outcomes associated with substance use in youth.

CRediT authorship contribution statement

Justine W. Welsh: Writing – review & editing, Writing – original draft, Methodology, Investigation, Conceptualization. **Alex R. Dopp:** Writing – review & editing, Supervision, Resources, Methodology, Investigation, Conceptualization. **Rebecca M. Durham:** Writing – original draft, Resources, Methodology. **Siara I. Sitar:** Writing – review & editing, Writing – original draft, Methodology. **Lora L. Passetti:** Writing – review & editing, Conceptualization. **Sarah B. Hunter:** Writing – review & editing, Conceptualization. **Mark D. Godley:** Writing – review & editing, Conceptualization. **Ken C. Winters:** Writing- review & editing, Conceptualization

This article is part of a special series devoted to the subject of substance use, featuring topics relevant to child and adolescent behavioral health, including genetics, neuroscience, epidemiology, measurement, prevention, and treatment. This special series is edited by Guest Editor Kevin M. Gray, MD, JAACAP Open Deputy Editor Kara S. Bagot, MD, JAACAP Deputy Editor Mary Fristad, PhD, ABPP, JAACAP and JAACAP Open Associate Editor Robert R. Althoff, MD, PhD, JAACAP Open Editor Manpreet K. Singh, MD, MS, and Editor-in-Chief Douglas K. Novins, MD.

Accepted March 18, 2024.

Dr. Welsh is with Emory University, Atlanta, Georgia. Dr. Dopp is with RAND Corporation Santa Monica, California. Ms. Durham is with Emory University, Atlanta, Georgia. Ms. Sitar is with Emory University, Atlanta, Georgia. Ms. Passetti is with Chestnut Health Systems, Normal, Illinois. Dr. Hunter is with RAND, Santa Monica, California. Dr. Godley is with Chestnut Health Systems, Normal, Illinois. Dr. Winters is with Oregon Research Institute, Minnesota.

Dr. Winters is supported by awards from the National Institute on Drug Abuse (R34DA049070 & R34DA53660, Waldron and Winters, MPI). Dr. Dopp, Ms. Passetti, Dr. Hunter, and Dr. Godley's contributions were supported by an award from the National Institute on Drug Abuse (R01DA051545; Dopp, PI).

Disclosure: Dr. Welsh has received consulting fees received from Applied Clinical Intelligence LLC (ACI Clinical). Drs. Dopp, Hunter, Godley, and Winters and Ms. Durham, Sitar, and Passetti have reported no biomedical financial interests or potential conflicts of interest.

Correspondence to Justine W. Welsh, MD, 1821 Clifton Road NE, Suite 1200, Atlanta, GA 30329; e-mail: justine.welsh@emory.edu

https://doi.org/10.1016/j.jaac.2024.03.010

REFERENCES

1. Substance Abuse and Mental Health Services Administration. Key substance use and mental health indicators in the united states: results from the 2021 National Survey on Drug Use and Health (HHS Publication No. PEP22-07-01-005, NSDUH Series H-57). Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration; 2022. Accessed April 9, 2023. https://www.samhsa.gov/data/report/2021-nsduh-annual-national-report
2. Substance Abuse and Mental Health Services Administration (US), Office of the Surgeon General (US). Facing addiction in America: the Surgeon General's report on alcohol, drugs, and health. US Department of Health and Human Services; 2016. Accessed September 7, 2023. http://www.ncbi.nlm.nih.gov/books/NBK424857/
3. National Center for HIV/AIDS. Viral Hepatitis, STD, and TB Prevention. Youth Risk Behavior Survey data summary & trends report, 2009–2019. Published online 2020; https://www.cdc.gov/healthyyouth/data/yrbs/pdf/YRBSDataSummaryTrendsReport2019-508.pdf
4. Miech RA, Jackson LD, Patrick ME, O'Malley PM, Bachman JG, Schulenberg JE. National Survey Results on Drug use, 1975-2022: secondary school students. Published online 2023. Accessed August 11, 2023. https://monitoringthefuture.org/wp-content/uploads/2022/12/mtf2022.pdf
5. Jeynes WH. The relationship between the consumption of various drugs by adolescents and their academic achievement. Am J Drug Alcohol Abuse. 2002;28(1):15-35. https://doi.org/10.1081/ada-120001279
6. Newcomb MD, Bentler PM. Impact of adolescent drug use and social support on problems of young adults: a longitudinal study. J Abnorm Psychol. 1988;97(1):64-75. https://doi.org/10.1037/0021-843X.97.1.64
7. Kenneson A, Funderburk JS, Maisto SA. Substance use disorders increase the odds of subsequent mood disorders. Drug Alcohol Depend. 2013;133(2):338-343. https://doi.org/10.1016/j.drugalcdep.2013.06.011
8. Wong SS, Zhou B, Goebert D, Hishinuma ES. The risk of adolescent suicide across patterns of drug use: a nationally representative study of high school students in the United States from 1999 to 2009. Soc Psychiatry Psychiatr Epidemiol. 2013;48(10):1611-1620. https://doi.org/10.1007/s00127-013-0721-z
9. CDC WONDER, Multiple cause of death (detailed mortality). National drug overdose (OD) Deaths, 1999-2021. Published online February 9, 2023. Accessed March 13, 2023. https://nida.nih.gov/research-topics/trends-statistics/overdose-death-rates
10. Mooney-Leber SM, Gould TJ. The long-term cognitive consequences of adolescent exposure to recreational drugs of abuse. Learn Mem Cold Spring Harb N. 2018;25(9):481-491. https://doi.org/10.1101/lm.046672.117
11. Crowe A. Drug identification and testing in the juvenile justice system: summary. Office of Juvenile Justice Deliquency Prevention. Published online May 1998:90. Accessed September 7, 2023. https://ojjdp.ojp.gov/library/publications/drug-identification-and-testing-juvenile-justice-system-summary
12. Alinsky RH, Zima BT, Rodean J, *et al.* Receipt of addiction treatment after opioid overdose among Medicaid-enrolled adolescents and young adults. JAMA Pediatr. 2020;174(3):e195183. https://doi.org/10.1001/jamapediatrics.2019.5183
13. National Survey of Substance Abuse Treatment Services. 2020 National Survey of Substance Abuse Treatment Services (N-SSATS) state profiles. Accessed April 9, 2023. https://www.samhsa.gov/data/report/2020-national-survey-substance-abuse-treatment-services-n-ssats-state-profiles
14. Palmer A, Karakus M, Mark T. Barriers faced by physicians in screening for substance use disorders among adolescents. Psychiatr Serv. 2019;70(5):409-412. https://doi.org/10.1176/appi.ps.201800427
15. National Institute on Drug Abuse. Principles of adolescent substance use disorder treatment: a research-based guide. Published online 2014. Accessed August 25, 2023. https://www.samhsa.gov/resource/ebp/principles-adolescent-substance-use-disorder-treatment-research-based-guide
16. Winters K, Botzet A, Stinchfield R, *et al.* Adolescent substance abuse treatment: a review of evidence-based research. In: Leukefeld C, Gullotta T, eds. Adolescent Substance Abuse.

Issues in Children's and Families' Lives. Cham: Springer; 2018:141-171. https://doi.org/10.1007/978-3-319-90611-9_5
17. Bauer MS, Kirchner J. Implementation science: what is it and why should I care? Psychiatry Res. 2020;283:112376. https://doi.org/10.1016/j.psychres.2019.04.025
18. Crable EL, Lengnick-Hall R, Stadnick NA, Moullin JC, Aarons GA. Where is "policy" in dissemination and implementation science? Recommendations to advance theories, models, and frameworks: EPIS as a case example. Implement Sci. 2022;17(1):1-14. https://doi.org/10.1186/s13012-022-01256-x
19. Boell S, Cecez-Kecmanovic D. A hermeneutic approach for conducting literature reviews and literature searches. Commun Assoc Inform Syst. 2014;32:257-286. https://doi.org/10.17705/1CAIS.03412
20. Monarque M, Sabetti J, Ferrari M. Digital interventions for substance use disorders in young people: rapid review. Subst Abuse Treat Prev Policy. 2023;18(1):13. https://doi.org/10.1186/s13011-023-00518-1
21. Calihan JB, Levy S. Substance use screening, brief intervention, and referral to treatment in pediatric primary care, school-based health clinics, and mental health clinics. Child Adolesc Psychiatr Clin N Am. 2023;32(1):115-126. https://doi.org/10.1016/j.chc.2022.08.002
22. Heinrich L, Hernandez AK, Laurie AR. Telehealth considerations for the adolescent patient. Prim Care. 2022;49(4):597-607. https://doi.org/10.1016/j.pop.2022.04.006
23. Mientkiewicz L, Grover P. Adolescent confidentiality and consent in an emergency setting. Pediatr Emerg Care. 2022;38(12):697-699. https://doi.org/10.1097/PEC.0000000000002880
24. Levy S, Ziemnik RE, Harris SK, *et al*. Screening adolescents for alcohol use: tracking practice trends of Massachusetts pediatricians. J Addict Med. 2017;11(6):427-434. https://doi.org/10.1097/ADM.0000000000000340
25. Agniel D, Almirall D, Burkhart Q, *et al*. Identifying optimal level-of-care placement decisions for adolescent substance use treatment. Drug Alcohol Depend. 2020;212:107991. https://doi.org/10.1016/j.drugalcdep.2020.107991
26. Bagley SM, Hadland SE, Schoenberger SF, *et al*. Integrating substance use care into primary care for adolescents and young adults: lessons learned. J Subst Abuse Treat. 2021;129:108376. https://doi.org/10.1016/j.jsat.2021.108376
27. Settipani CA, Hawke LD, Virdo G, Yorke E, Mehra K, Henderson J. Social determinants of health among youth seeking substance use and mental health treatment. J Can Acad Child Adolesc Psychiatry. 2018;27(4):213-221.
28. Winer JM, Yule AM, Hadland SE, Bagley SM. Addressing adolescent substance use with a public health prevention framework: the case for harm reduction. Ann Med. 2022;54(1):2123-2136. https://doi.org/10.1080/07853890.2022.2104922
29. Tolou-Shams M, Harrison A, Hirschtritt ME, Dauria E, Barr-Walker J. Substance use and HIV among justice-involved youth: intersecting risks. Curr HIV/AIDS Rep. 2019;16(1):37-47. https://doi.org/10.1007/s11904-019-00424-x
30. Fadus MC, Squeglia LM, Valadez EA, Tomko RL, Bryant BE, Gray KM. Adolescent substance use disorder treatment: an update on evidence-based strategies. Curr Psychiatry Rep. 2019;21(10):96. https://doi.org/10.1007/s11920-019-1086-0
31. Dopp AR, Hunter SB, Godley MD, *et al*. Comparing two federal financing strategies on penetration and sustainment of the adolescent community reinforcement approach for substance use disorders: protocol for a mixed-method study. Implement Sci Commun. 2022;3(1):51. https://doi.org/10.1186/s43058-022-00298-y
32. Dopp AR, Manuel JK, Breslau J, *et al*. Value of family involvement in substance use disorder treatment: aligning clinical and financing priorities. J Subst Abuse Treat. 2022;132:108652. https://doi.org/10.1016/j.jsat.2021.108652
33. Lu W, Muñoz-Laboy M, Sohler N, Goodwin RD. Trends and disparities in treatment for co-occurring major depression and substance use disorders among US Adolescents from 2011 to 2019. JAMA Netw Open. 2021;4(10):e2130280. https://doi.org/10.1001/jamanetworkopen.2021.30280
34. Brewer S, Godley MD, Hulvershorn LA. Treating mental health and substance use disorders in adolescents: what is on the menu? Curr Psychiatry Rep. 2017;19(1):5. https://doi.org/10.1007/s11920-017-0755-0
35. Sharko M, Jameson R, Ancker JS, Krams L, Webber EC, Rosenbloom ST. State-by-state variability in adolescent privacy laws. Pediatrics. 2022;149(6):e2021053458. https://doi.org/10.1542/peds.2021-053458
36. McKay JR. Impact of continuing care on recovery from substance use disorder. Alcohol Res Curr Rev. 2021;41(1):1. https://doi.org/10.35946/arcr.v41.1.01
37. Winters KC, Waldron H, Hops H, Ozechowski T, Montano A. Brief interventions for cannabis using adolescents. Child Adolesc Psychiatr Clin N Am. 2023;32(1):127-140. https://doi.org/10.1016/j.chc.2022.06.004
38. Hammond CJ, Parhami I, Young AS, *et al*. Provider and practice characteristics and perceived barriers associated with different levels of adolescent SBIRT implementation among a national sample of US pediatricians. Clin Pediatr (Phila). 2021;60(9-10):418-426. https://doi.org/10.1177/00099228211034334
39. Hogue A, Henderson CE, Becker SJ, Knight DK. Evidence base on outpatient behavioral treatments for adolescent substance use, 2014-2017: outcomes, treatment delivery, and promising horizons. J Clin Child Adolesc Psychol. 2018;47(4):499-526. https://doi.org/10.1080/15374416.2018.1466307
40. Stanger C, Budney AJ. Contingency management: using incentives to improve outcomes for adolescent substance use disorders. Pediatr Clin North Am. 2019;66(6):1183-1192. https://doi.org/10.1016/j.pcl.2019.08.007
41. Squeglia LM, Fadus MC, McClure EA, Tomko RL, Gray KM. Pharmacological treatment of youth substance use disorders. J Child Adolesc Psychopharmacol. 2019;29(7):559-572. https://doi.org/10.1089/cap.2019.0009
42. Godley MD, Passetti LL, Hunter BD, Griffin BA. Volunteer Recovery Support for Adolescents: Using propensity score based methods to understand dosage effects within a randomized controlled trial. J Subst Abuse Treat. 2022;132:108637. https://doi.org/10.1016/j.jsat.2021.108637
43. Jenkins EK, Slemon A, Haines-Saah RJ. Developing harm reduction in the context of youth substance use: insights from a multi-site qualitative analysis of young people's harm minimization strategies. Harm Reduct J. 2017;14(1):53. https://doi.org/10.1186/s12954-017-0180-z
44. Reif S, Brolin M, Beyene TM, D'Agostino N, Stewart MT, Horgan CM. Payment and financing for substance use screening and brief intervention for adolescents and adults in health, school, and community settings. J Adolesc Health. 2022;71(4S):S73-S82. https://doi.org/10.1016/j.jadohealth.2022.04.012
45. Chadi N, Bagley SM, Hadland SE. Addressing adolescents' and young adults' substance use disorders. Med Clin North Am. 2018;102(4):603-620. https://doi.org/10.1016/j.mcna.2018.02.015
46. Kulak JA, Griswold KS. Adolescent substance use and misuse: recognition and management. Am Fam Physician. 2019;99(11):689-696.
47. NIH National Institute on Drug Abuse. Screening and assessment tools chart. Published January 6, 2023. Accessed April 1, 2023. http://nida.nih.gov/nidamed-medical-health-professionals/screening-tools-resources/chart-screening-tools
48. Pender E, Kostak L, Sutton K, *et al*. Resources for the assessment and treatment of substance use disorder in adolescents. WikiJournal Med Med. 2023;10(1):1. https://doi.org/10.15347/WJM/2023.001
49. Nelson LF, Weitzman ER, Levy S. Prevention of substance use disorders. Med Clin North Am. 2022;106(1):153-168. https://doi.org/10.1016/j.mcna.2021.08.005
50. ASPE. Implementation barriers to and facilitators of screening, brief intervention, referral, and treatment (SBIRT) in federally qualified health centers (FQHCs). Accessed August 10, 2023. https://aspe.hhs.gov/reports/implementation-barriers-facilitators-screening-brief-intervention-referral-treatment-sbirt-federally-0
51. Paltzer J, Brown RL, Burns M, *et al*. Substance use screening, brief intervention, and referral to treatment among Medicaid patients in Wisconsin: impacts on healthcare utilization and costs. J Behav Health Serv Res. 2017;44(1):102-112. https://doi.org/10.1007/s11414-016-9510-2
52. Paltzer J, Moberg DP, Burns M, Brown RL. Health care utilization after paraprofessional-administered substance use screening, brief intervention, and referral to treatment: a multi-level cost-offset analysis. Med Care. 2019;57(9):673. https://doi.org/10.1097/MLR.0000000000001162
53. Steele DW, Becker SJ, Danko KJ, *et al*. Brief behavioral interventions for substance use in adolescents: a meta-analysis. Pediatrics. 2020;146(4):e20200351. https://doi.org/10.1542/peds.2020-0351
54. Levy SJL, Kokotailo PK. Committee on Substance Abuse. Substance use screening, brief intervention, and referral to treatment for pediatricians. Pediatrics. 2011;128(5):e1330-e1340. https://doi.org/10.1542/peds.2011-1754
55. Calihan JB, Levy S. Substance use screening, brief intervention, and referral to treatment in pediatric primary care, school-based health clinics, and mental health clinics. Child Adolesc Psychiatr Clin N Am. 2023;32(1):115-126. https://doi.org/10.1016/j.chc.2022.08.002
56. Kaminer Y, Winters KC. Clinical Manual of Youth Addictive Disorders. eBooks. Accessed August 24, 2023. https://psychiatryonline.org/doi/book/10.1176/appi.books.9781615372812
57. Levy SJL, Williams JF. Committee on Substance Use and Prevention. Substance use screening, brief intervention, and referral to treatment. Pediatrics. 2016;138(1):e20161211. https://doi.org/10.1542/peds.2016-1211
58. Krieger H, Young CM, Anthenien AM, Neighbors C. The epidemiology of binge drinking among college-age individuals in the United States. Alcohol Res Curr Rev. 2018;39(1):23-30.
59. Welsh JW, Sitar SI, Hunter BD, Godley MD, Dennis ML. Substance use severity as a predictor for receiving medication for opioid use disorder among adolescents: an analysis of the 2019 TEDS. Drug Alcohol Depend. 2023;246:109850. https://doi.org/10.1016/j.drugalcdep.2023.109850
60. Gray KM, Carpenter MJ, Baker NL, *et al*. A double-blind randomized controlled trial of N-acetylcysteine in cannabis-dependent adolescents. Am J Psychiatry. 2012;169(8):805-812. https://doi.org/10.1176/appi.ajp.2012.12010055

61. Boness CL, Carlos Gonzalez J, Sleep C, Venner KL, Witkiewitz K. Evidence-based assessment of substance use disorder. Assessment. 2024;31:168-190. https://doi.org/10.1177/10731911231177252
62. Lintz MJ, Sutton B, Thurstone C. Associations between school-based substance use treatment and academic outcomes. J Child Adolesc Psychopharmacol. 2019;29(7):554-558. https://doi.org/10.1089/cap.2018.0178
63. Sarvey D, Welsh JW. Adolescent substance use: challenges and opportunities related to COVID-19. J Subst Abuse Treat. 2021;122:108212. https://doi.org/10.1016/j.jsat.2020.108212
64. McLean SA, Booth AT, Schnabel A, Wright BJ, Painter FL, McIntosh JE. Exploring the efficacy of telehealth for family therapy through systematic, meta-analytic, and qualitative evidence. Clin Child Fam Psychol Rev. 2021;24(2):244-266. https://doi.org/10.1007/s10567-020-00340-2
65. Treatment Episode Data Set (TEDS): 2020 Admissions To and Discharges From Publicly Funded Substance Use Treatment Facilities, CBHSQ Data. Accessed August 14, 2023. https://www.samhsa.gov/data/report/treatment-episode-data-set-teds-2020-admissions
66. National Institute on Drug Abuse. Principles of adolescent substance use disorder treatment: a research-based guide. Published January 2014. Accessed December 15, 2017. https://www.drugabuse.gov/publications/principles-adolescent-substance-use-disorder-treatment-research-based-guide/introduction
67. Mientkiewicz L, Grover P. Adolescent confidentiality and consent in an emergency setting. Pediatr Emerg Care. 2022;38(12):697-699. https://doi.org/10.1097/PEC.0000000000002880
68. Gilbert AL, Rickert VI, Aalsma MC. Clinical conversations about health: the impact of confidentiality in preventive adolescent care. J Adolesc Health. 2014;55(5):672-677. https://doi.org/10.1016/j.jadohealth.2014.05.016
69. Gotlieb RJM, Yang XF, Immordino-Yang MH. Concrete and abstract dimensions of diverse adolescents' social-emotional meaning-making, and associations with broader functioning. J Adolesc Res. Published online April 29, 2022:07435584221091498. https://doi.org/10.1177/07435584221091498
70. Welsh JW, Dennis ML, Funk R, Mataczynski MJ, Godley MD. Trends and age-related disparities in opioid use disorder treatment admissions for adolescents and young adults. J Subst Abuse Treat. 2022;132:108584. https://doi.org/10.1016/j.jsat.2021.108584
71. Committee on Substance Use and Prevention. Medication-assisted treatment of adolescents with opioid use disorders. Pediatrics. 2016;138(3):e20161893. https://doi.org/10.1542/peds.2016-1893
72. American Society for Adolescent Medicine. National Practice Guideline for the Treatment of Opioid Use Disorder—2020 focused update. Published February 5, 2021. Accessed August 11, 2023. https://www.samhsa.gov/resource/ebp/asam-national-practice-guideline-treatment-opioid-use-disorder
73. Hawke LD, Mehra K, Settipani C, *et al*. What makes mental health and substance use services youth friendly? A scoping review of literature. BMC Health Serv Res. 2019;19(1):257. https://doi.org/10.1186/s12913-019-4066-5
74. Agniel D, Almirall D, Burkhart Q, *et al*. Identifying optimal level-of-care placement decisions for adolescent substance use treatment. Drug Alcohol Depend. 2020;212:107991. https://doi.org/10.1016/j.drugalcdep.2020.107991
75. Padwa H, Mark TL, Wondimu B. What's in an "ASAM-based assessment?" Variations in assessment and level of care determination in systems required to use ASAM patient placement criteria. J Addict Med. 2022;16(1):18-26. https://doi.org/10.1097/ADM.0000000000000804
76. Rosenblatt RA, Andrilla CHA, Catlin M, Larson EH. Geographic and specialty distribution of US physicians trained to treat opioid use disorder. Ann Fam Med. 2015;13(1):23-26. https://doi.org/10.1370/afm.1735
77. Trucco EM. A review of psychosocial factors linked to adolescent substance use. Pharmacol Biochem Behav. 2020;196:172969. https://doi.org/10.1016/j.pbb.2020.172969
78. Johnson G, Chamberlain C. Homelessness and substance abuse: which comes first? Aust Soc Work. 2008;61(4):342-356. https://doi.org/10.1080/03124070802428191
79. Clayton HB, Lowry R, August E, Everett Jones S. Nonmedical use of prescription drugs and sexual risk behaviors. Pediatrics. 2016;137(1):e20152480. https://doi.org/10.1542/peds.2015-2480
80. Schumacher A, Marzell M, Toepp AJ, Schweizer ML. Association between marijuana use and condom use: a meta-analysis of between-subject event-based studies. J Stud Alcohol Drugs. 2018;79(3):361-369. https://doi.org/10.15288/jsad.2018.79.361
81. Valois RF, Oeltmann JE, Waller J, Hussey JR. Relationship between number of sexual intercourse partners and selected health risk behaviors among public high school adolescents. J Adolesc Health. 1999;25(5):328-335. https://doi.org/10.1016/s1054-139x(99)00051-8
82. Hepatitis B and C—ClinicalKey. Accessed August 4, 2023. https://www-clinicalkey-com.proxy.library.emory.edu/#!/content/playContent/1-s2.0-S003139551730007X?returnurl=null&referrer=null
83. McQuade M, Reddy N, Barbour K, Owens L. Integrating reproductive health care into substance use disorder services. Int Rev Psychiatry. 2021;33(6):572-578. https://doi.org/10.1080/09540261.2021.1904845
84. Tsakiridis I, Oikonomidou AC, Bakaloudi DR, Dagklis T, Papazisis G, Chourdakis M. Substance use during pregnancy: a comparative review of major guidelines. Obstet Gynecol Surv. 2021;76(10):634. https://doi.org/10.1097/OGX.0000000000000943
85. Bornstein M, Gipson JD, Bleck R, Sridhar A, Berger A. Perceptions of pregnancy and contraceptive use: an in-depth study of women in Los Angeles methadone clinics. Womens Health Issues. 2019;29(2):176-181. https://doi.org/10.1016/j.whi.2018.10.004
86. Tanner-Smith EE, Steinka-Fry KT, Kettrey HH, Lipsey MW. Adolescent substance use treatment effectiveness: a systematic review and meta-analysis. US Department of Justice. Published online 2016. Accessed January 1, 2023. https://www.ojp.gov/ncjrs/virtual-library/abstracts/adolescent-substance-use-treatment-effectiveness-systematic-review
87. Fadus MC, Squeglia LM, Valadez EA, Tomko RL, Bryant BE, Gray KM. Adolescent substance use disorder treatment: an update on evidence-based strategies. Curr Psychiatry Rep. 2019;21(10):96. https://doi.org/10.1007/s11920-019-1086-0
88. Hides L, Carroll S, Catania L, *et al*. Outcomes of an integrated cognitive behaviour therapy (CBT) treatment program for co-occurring depression and substance misuse in young people. J Affect Disord. 2010;121(1):169-174. https://doi.org/10.1016/j.jad.2009.06.002
89. Cornelius JR, Douaihy A, Bukstein OG, *et al*. Evaluation of cognitive behavioral therapy/motivational enhancement therapy (CBT/MET) in a treatment trial of co-morbid MDD/AUD adolescents. Addict Behav. 2011;36(8):843-848. https://doi.org/10.1016/j.addbeh.2011.03.016
90. Godley SH, Garner BR, Smith JE, Meyers RJ, Godley MD. A large-scale dissemination and implementation model for evidence-based treatment and continuing care. Clin Psychol. 2011;18(1):67-83. https://doi.org/10.1111/j.1468-2850.2011.01236.x
91. Dennis M, Godley SH, Diamond G, *et al*. The Cannabis Youth Treatment (CYT) Study: main findings from two randomized trials. J Subst Abuse Treat. 2004;27(3):197-213. https://doi.org/10.1016/j.jsat.2003.09.005
92. Stanger C, Lansing AH, Budney AJ. Advances in research on contingency management for adolescent substance use. Child Adolesc Psychiatr Clin N Am. 2016;25(4):645-659. https://doi.org/10.1016/j.chc.2016.05.002
93. Hogue A, Dauber S, Bobek M, Jensen-Doss A, Henderson CE. Measurement training and feedback system for implementation of family-based services for adolescent substance use: protocol for a cluster randomized trial of two implementation strategies. Implement Sci IS. 2019;14(1):25. https://doi.org/10.1186/s13012-019-0874-6
94. Horigian VE, Anderson AR, Szapocznik J. Family-based treatments for adolescent substance use. Child Adolesc Psychiatr Clin N Am. 2016;25(4):603-628. https://doi.org/10.1016/j.chc.2016.06.001
95. Afuseh E, Pike CA, Oruche UM. Individualized approach to primary prevention of substance use disorder: age-related risks. Subst Abuse Treat Prev Policy. 2020;15(1):58. https://doi.org/10.1186/s13011-020-00300-7
96. Nawi AM, Ismail R, Ibrahim F, *et al*. Risk and protective factors of drug abuse among adolescents: a systematic review. BMC Public Health. 2021;21(1):2088. https://doi.org/10.1186/s12889-021-11906-2
97. Ashford RD, Brown A, Canode B, Sledd A, Potter JS, Bergman BG. Peer-based recovery support services delivered at recovery community organizations: predictors of improvements in individual recovery capital. Addict Behav. 2021;119:106945. https://doi.org/10.1016/j.addbeh.2021.106945
98. Hogue A, Becker SJ, Wenzel K, *et al*. Family involvement in treatment and recovery for substance use disorders among transition-age youth: research bedrocks and opportunities. J Subst Abuse Treat. 2021;129:108402. https://doi.org/10.1016/j.jsat.2021.108402
99. Couwenbergh C, van den Brink W, Zwart K, Vreugdenhil C, van Wijngaarden-Cremers P, van der Gaag RJ. Comorbid psychopathology in adolescents and young adults treated for substance use disorders: a review. Eur Child Adolesc Psychiatry. 2006;15(6):319-328. https://doi.org/10.1007/s00787-006-0535-6
100. Welsh JW, Mataczynski M, Sarvey DB, Zoltani JE. Management of complex co-occurring psychiatric disorders and high-risk behaviors in adolescence. Focus J Life Long Learn Psychiatry. 2020;18(2):139-149. https://doi.org/10.1176/appi.focus.20190038
101. Bachrach RL, Chung T. Moderators of substance use disorder treatment for adolescents. J Clin Child Adolesc Psychol. 2021;50(4):498-509. https://doi.org/10.1080/15374416.2020.1790379
102. Teplin LA, Elkington KS, McClelland GM, Abram KM, Mericle AA, Washburn JJ. Major mental disorders, substance use disorders, comorbidity, and HIV-AIDS risk behaviors in juvenile detainees. Psychiatr Serv. 2005;56(7):823-828. https://doi.org/10.1176/appi.ps.56.7.823
103. Shane PA, Jasiukaitis P, Green RS. Treatment outcomes among adolescents with substance abuse problems: the relationship between comorbidities and post-treatment

substance involvement. Eval Program Plann. 2003;26(4):393-402. https://doi.org/10.1016/S0149-7189(03)00055-7

104. Lewinsohn PM, Rohde P, Seeley JR. Adolescent psychopathology: III. The clinical consequences of comorbidity. J Am Acad Child Adolesc Psychiatry. 1995;34(4):510-519. https://doi.org/10.1097/00004583-199504000-00018
105. Sterling S, Weisner C. Chemical dependency and psychiatric services for adolescents in private managed care: implications for outcomes. Alcohol Clin Exp Res. 2005;29(5):801-809. https://doi.org/10.1097/01.ALC.0000164373.89061.2C
106. Priester MA, Browne T, Iachini A, Clone S, DeHart D, Seay KD. Treatment access barriers and disparities among individuals with co-occurring mental health and substance use disorders: an integrative literature review. J Subst Abuse Treat. 2016;61:47-59. https://doi.org/10.1016/j.jsat.2015.09.006
107. Lu W, Muñoz-Laboy M, Sohler N, Goodwin RD. Trends and disparities in treatment for co-occurring major depression and substance use disorders among US adolescents from 2011 to 2019. JAMA Netw Open. 2021;4(10):e2130280. https://doi.org/10.1001/jamanetworkopen.2021.30280. 28.
108. Minkoff K, Covell NH. Recommendations for integrated systems and services for people with co-occurring mental health and substance use conditions. Psychiatr Serv. 2022;73(6):686-689. https://doi.org/10.1176/appi.ps.202000839
109. Welsh JW, Schwartz AC, DeJong SM. Addictions training in child and adolescent psychiatry fellowships. Acad Psychiatry. 2019;43(1):13-17. https://doi.org/10.1007/s40596-018-0959-6
110. Bureau of Justice Statistics. Drug and Alcohol Use Reported by Youth in Juvenile Facilities, 2008–2018 – Statistical Tables. Accessed August 9, 2023. https://bjs.ojp.gov/library/publications/drug-and-alcohol-use-reported-youth-juvenile-facilities-2008-2018-statistical
111. Sharko M, Jameson R, Ancker JS, Krams L, Webber EC, Rosenbloom ST. State-by-state variability in adolescent privacy laws. Pediatrics. 2022;149(6):e2021053458. https://doi.org/10.1542/peds.2021-053458
112. Hunter B, Godley M, Godley S. Feasibility of implementing the Adolescent Community Reinforcement Approach in school settings for adolescents with substance use disorders. Adv Sch Ment Health Promot. 2014;7:105-122. https://doi.org/10.1080/1754730X.2014.888224
113. McKay JR. Impact of continuing care on recovery from substance use disorder. Alcohol Res Curr Rev. 2021;41(1):1. https://doi.org/10.35946/arcr.v41.1.01
114. Sweeney MM, Holtyn AF, Stitzer ML, Gastfriend DR. Practical technology for expanding and improving substance use disorder treatment: telehealth, remote monitoring, and digital health interventions. Psychiatr Clin North Am. 2022;45(3):515-528. https://doi.org/10.1016/j.psc.2022.05.006
115. Martin-Willett R, Helmuth T, Abraha M, *et al*. Validation of a multisubstance online Timeline Followback assessment. Brain Behav. 2020;10(1):e01486. https://doi.org/10.1002/brb3.1486
116. Dennis ML, Funk R, Godley SH, Godley MD, Waldron H. Cross-validation of the alcohol and cannabis use measures in the Global Appraisal of Individual Needs (GAIN) and Timeline Followback (TLFB; form 90) among adolescents in substance abuse treatment. Addict Abingdon Engl. 2004;99(Suppl 2):120-128. https://doi.org/10.1111/j.1360-0443.2004.00859.x
117. Kaminer Y, Bukstein O, Tarter RE. The Teen-Addiction Severity Index: rationale and reliability. Int J Addict. 1991;26(2):219-226. https://doi.org/10.3109/10826089109053184
118. Meyers K, Hagan TA, McDermott P, Webb A, Randall M, Frantz J. Factor structure of the Comprehensive Adolescent Severity Inventory (CASI): results of reliability, validity, and generalizability analyses. Am J Drug Alcohol Abuse. 2006;32(3):287-310. https://doi.org/10.1080/00952990500479464
119. SAMHSA. TAP 32: Clinical Drug Testing in Primary Care. Accessed August 13, 2023. https://store.samhsa.gov/product/TAP-32-Clinical-Drug-Testing-Primary-Care/SMA12-4668
120. McLellan AT, Lewis DC, O'Brien CP, Kleber HD. Drug dependence, a chronic medical illness: implications for treatment, insurance, and outcomes evaluation. JAMA. 2000;284(13):1689-1695. https://doi.org/10.1001/jama.284.13.1689
121. Godley MD, Godley SH. Assertive continuing care for adolescentsAddiction Recovery Management: Theory, Research and Practice. Humana Press/Springer Nature; 2011:103-126.
122. Barnett E, Sussman S, Smith C, Rohrbach LA, Spruijt-Metz D. Motivational interviewing for adolescent substance use: a review of the literature. Addict Behav. 2012;37(12):1325-1334. https://doi.org/10.1016/j.addbeh.2012.07.001
123. Jensen CD, Cushing CC, Aylward BS, Craig JT, Sorell DM, Steele RG. Effectiveness of motivational interviewing interventions for adolescent substance use behavior change: a meta-analytic review. J Consult Clin Psychol. 2011;79(4):433-440. https://doi.org/10.1037/a0023992
124. Hunt D, Fischer L, Sheedy K, Karon S. Substance use screening, brief intervention, and referral to treatment in multiple settings: evaluation of a national initiative. J Adolesc Health. 2022;71(4, Suppl):S9-S14. https://doi.org/10.1016/j.jadohealth.2022.03.002
125. Martin G, Copeland J. The adolescent cannabis check-up: randomized trial of a brief intervention for young cannabis users. J Subst Abuse Treat. 2008;34(4):407-414. https://doi.org/10.1016/j.jsat.2007.07.004
126. Kristman-Valente AN, McCarty CA, Walker DD, Walker-Harding L. Barriers to implementing a cannabis focused SBIRT in adolescent primary care. Subst Abuse Res Treat. 2022;16:11782218221111837. https://doi.org/10.1177/11782218221111837
127. Amodeo M, Lundgren L, Cohen A, *et al*. Barriers to implementing evidence-based practices in addiction treatment programs: comparing staff reports on motivational interviewing, adolescent community reinforcement approach, assertive community treatment, and cognitive-behavioral therapy. Eval Program Plann. 2011;34(4):382-389. https://doi.org/10.1016/j.evalprogplan.2011.02.005
128. Esteban J, Suárez-Relinque C, Jiménez TI. Effects of family therapy for substance abuse: a systematic review of recent research. Fam Process. 2023;62(1):49-73. https://doi.org/10.1111/famp.12841
129. LoBraico EJ, Fosco GM, Crowley DM, Redmond C, Spoth RL, Feinberg ME. Examining intervention component dosage effects on substance use initiation in the strengthening families program: for parents and youth ages 10-14. Prev Sci. 2019;20(6):852-862. https://doi.org/10.1007/s11121-019-00994-7
130. Wu SS, Schoenfelder E, Hsiao RCJ. Cognitive behavioral therapy and motivational enhancement therapy. Child Adolesc Psychiatr Clin N Am. 2016;25(4):629-643. https://doi.org/10.1016/j.chc.2016.06.002
131. Stanger C, Budney AJ. Contingency Management: using incentives to improve outcomes for adolescent substance use disorders. Pediatr Clin North Am. 2019;66(6):1183-1192. https://doi.org/10.1016/j.pcl.2019.08.007
132. Hirchak K, Echo-Hawk H, Parent S, *et al*. The urgent need for contingency management among tribal communities in the United States: considerations for implementation, policy, and sovereignty. Prev Med. 2023;176:107662. https://doi.org/10.1016/j.ypmed.2023.107662
133. U.S. Food and Drug Administration. Drug Approval Package: Subutex (buprenorphine HCl) Suboxone (buprenorphine HCl & naloxone HCl dihydrate) NDA #020732 & 020733. Accessed September 8, 2023. https://www.accessdata.fda.gov/drugsatfda_docs/nda/2002/20-732_20-733_subutex.cfm
134. van der Zanden TM, Smeets NJL, de Hoop-Sommen M, *et al*. Off-label, but on-evidence? a Review of the level of evidence for pediatric pharmacotherapy. Clin Pharmacol Ther. 2022;112(6):1243-1253. https://doi.org/10.1002/cpt.2736
135. Godley M, Godley S, Dennis M, Funk R, Passetti L. The effect of assertive continuing care on continuing care linkage, adherence and abstinence following residential treatment for adolescents with substance use disorders. Addict Abingdon Engl. 2007;102(1). https://doi.org/10.1111/j.1360-0443.2006.01648.x
136. Godley MD, Godley SH, Dennis ML, Funk RR, Passetti LL, Petry NM. A randomized trial of assertive continuing care and contingency management for adolescents with substance use disorders. J Consult Clin Psychol. 2014;82(1):40-51. https://doi.org/10.1037/a0035264
137. Kelly JF, Humphreys K, Ferri M. Alcoholics Anonymous and other 12-Step programs for alcohol use disorder. Cochrane Database Syst Rev. 2020;3(3):CD012880. https://doi.org/10.1002/14651858.CD012880.pub2