

## Promising Opportunities to Intervene on Adolescent Substance Use

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We have recent signs of hope regarding the substance use epidemic currently plaguing the United States. Provisional data indicate that drug overdose deaths declined from 112,910 in the year ending October 2023 to 84,076 in the year ending October 2024 (−25.5%) (1). In this issue of the *Journal*, McCabe and colleagues (2) report analyses of serial cross-sectional annual surveys of 12th-graders from the Monitoring the Future Study (3) collected from 2009 to 2022 showing that non-medical use of prescription opioids, benzodiazepines, and stimulants significantly declined over that time frame. Respondents also report that prescription forms of these controlled substances have become increasingly hard to obtain. However, while lifetime medical use of prescription opioids also decreased over time, lifetime medical use of prescription benzodiazepines and amphetamines did not.

McCabe et al. provide solid explanations for the decline in medical and non-medical use of prescription opioids. Over the past decade treatment guidelines and other sources have discouraged the use of opioids to treat chronic and sometimes even acute pain and have recommended provision of limited quantities when these medications are prescribed. Although psychiatrists have a very limited role in prescribing opioids, clinicians who do treat pain in adolescents are best advised to eschew opioids whenever possible, rely primarily on acetaminophen and non-steroidal anti-inflammatory medications for acute pain unless extremely severe, and use cognitive behavioral therapy for chronic pain management.

One question that remains is whether the much more circumscribed prescribing of opioids is solely responsible for the declines in use or whether attitudes toward use of opioids have also changed among successive cohorts of adolescents. On that point reasons for the welcome declines in non-medical use of benzodiazepines and amphetamines remain more obscure, and additional research into this topic is needed. If we better understood the dynamics behind these positive trends, we might uncover interventions to enhance them further.

Psychiatrists do play large roles in prescribing benzodiazepines and stimulants. The approach to prescribing each of these two classes of medications is almost diametrically opposite. Regarding benzodiazepines, justification for prescribing them to adolescents at all is difficult to envision,

except for alcohol withdrawal and perhaps in the context of extreme acute anxiety. We have evidence-based psychotherapies for anxiety disorders and insomnia that are generally more effective than medications, and if medications are to be used, there are safer alternatives to benzodiazepines which obviously can cause intoxication and can induce tolerance, and lead to withdrawal symptoms if used repeatedly and then stopped.

In contrast, stimulants are the treatment of choice for attention-deficit/hyperactivity disorder (ADHD), which is common and can be disabling among adolescents. All available evidence suggests that for individuals with ADHD, prescribing stimulants is not associated with increased likelihood of developing a stimulant or other substance use problem (4) but does contribute to better overall functional status in social, academic, and work-related domains. Thus, accurate diagnosis of ADHD should be encouraged with prescription of stimulants when it is confirmed, and increasing stimulant prescriptions in this context would be a positive sign among 12th graders in light of

evidence that many adolescents with ADHD do not receive treatment for their symptoms (5). Nevertheless, since McCabe et al. also show that the most common source for non-medical use derives from one's own leftover supply of medication, clinicians need to monitor closely adolescents' adherence to stimulant regimens and prescribe the least amount needed to maintain stability. Additionally, patients and families should be educated about resources on medicine take-back options at the time of prescribing.

Broadening the scope from the specifics of the McCabe et al. paper, prescription medications are hardly the only substances that are misused by adolescents, with illicit forms of opioids (particularly fentanyl and its analogs), benzodiazepines (especially alprazolam), and methamphetamines

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widely and inexpensively available. Happily, more good news on this front comes from the latest iteration of the Monitoring the Future Study which shows that in 2024 illicit drug use also declined among 12th graders, reaching the lowest level during the 50-year existence of the study, with 26.5% reporting past year use of any illicit drug (decline from 38.7% in 2020) and 6.5% any illicit drug other than cannabis (decline from 11.4% in 2020) (6). Despite increasing legalization across states, past year use of cannabis also significantly declined in 12th graders as well in 2024 (25.8%; decline from 35.2% in 2020) as did past year rates of alcohol use (41.7%; decline from 55.3% in 2020) and nicotine vaping (21.0%; decline from 34.5% in 2020).

Despite some positive trends, we cannot come close to claiming victory. The number of non-fatal fentanyl exposures (most intentional) among individuals ages 13–19 reported to U.S. poison centers increased from 32 in 2015 to 514 in 2023 (7). Also, data from the 2023 National Survey on Drug Use and Health (8) indicate that over two million U.S. children between the ages of 12 and 17 had a current substance use disorder, with the vast majority being cannabis use disorder. Only a small fraction (3.3%) of these children believed they needed treatment, and most of those who recognized the need still did not seek treatment (9). We need more readily available and better treatments specifically targeted toward adolescents, particularly for cannabis use disorder (10).

Adolescence represents a critical juncture in the lifespan for the onset of substance use and the development of substance use disorders. Most initial experimentation with substances occurs during adolescence, and in many cases (as noted below), if no intervention supervenes, a substance use disorder can develop potentially leading to a lifetime of disability which could have been prevented by timely intervention. The evidence we have indicates that delaying experimentation to later ages can reduce risk of engaging in hazardous use or developing a substance use disorder (11, 12), and so to some extent external controls that have been applied to opioids in the past decade might decrease or delay initial exposures, thereby reducing the risk for development of substance use disorders. Additionally, a school-based intervention consisting of two cognitive behavioral-focused sessions directed specifically at 7th-graders with personality traits indicating risk for substance use was recently demonstrated in a cluster-randomized trial to delay onset of use and reduce rates of proceeding to a substance use disorder over a 5 year follow-up period (8.5% intervention versus 10.4% control) (13). This intervention deserves further study and likely widespread real-world implementation.

Furthermore, capitalizing on the positive trends noted above, we should leverage digital platforms for public health messaging to counter misinformation, help deter adolescents' use of cannabis and other substances, and encourage those who need treatment to seek it. Since adolescents spend considerable time on their smartphones (14), finding innovative ways to provide such messages via social media sites, intriguing video games (15), or text messaging (16) appears promising.

So, to meet the moment, the findings from McCabe and colleagues encourage us to continue to place controls on and discourage use of prescription opioids and benzodiazepines among adolescents, while also appropriately prescribing stimulants to adolescents with ADHD along with careful monitoring. Beyond these measures, we should support effective school-based initiatives that prevent and delay substance use within targeted populations of adolescents; wisely deploy public health messaging through venues in which adolescents obtain their information; and design, test, and make readily available treatments for adolescent substance use disorders. Such a panoply of initiatives, while hardly trivial to enact, would likely improve the overall well-being of some of our youngest citizens and lead them toward more productive and gratifying adulthoods while benefiting us all. Psychiatry can play a major role in this endeavor.

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