



RESEARCH REPORT

# Characteristics of Medicaid-Enrolled Adolescents with Unhealthy Opioid or Other Substance Use

**Substance Use Screening and Treatment, Health Care Visits, and Involvement with School and Other Institutions from 2015 to 2019**

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# Contents

<b>Acknowledgments</b>	<b>iv</b>
<b>Medicaid-Enrolled Adolescents with Unhealthy Opioid Use</b>	<b>1</b>
Introduction	1
Methods	3
Results	4
Discussion	17
Limitations	18
Implications	18
Conclusion	20
<b>Notes</b>	<b>22</b>
<b>References</b>	<b>23</b>
<b>About the Authors</b>	<b>26</b>
<b>Statement of Independence</b>	<b>28</b>

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# Medicaid-Enrolled Adolescents with Unhealthy Opioid Use

## Introduction

Substance use, including unhealthy opioid use, is a major contributor to morbidity and mortality among adolescents in the United States (Ammerman 2019). Adolescence, the developmental period between childhood and adulthood, is an intense period of social, emotional, and identity development accompanied by changes in the brain that can be affected by substance use. And substance use can have immediate and long-term adverse consequences, particularly for early initiators (NASEM 2019). Substance use is common among adolescents. In 2019, 29 percent of adolescents in grades 9 to 12 reported current alcohol use, 22 percent reported current marijuana use, and 7 percent reported current unhealthy opioid use, which includes the spectrum from risky opioid use to opioid use disorder, or OUD (Jones 2020). Drug overdoses were the sixth leading cause of death among children and adolescents in 2016, with more than half due to opioids (Cunningham, Walton, and Carter 2018). Risks associated with unhealthy opioid use often emerge during adolescence and include factors beyond opioid use, such as mental health; use of alcohol, tobacco, marijuana, and other substances (Barnett et al. 2019; Darke, Torok, and Ross 2017); and higher levels of nonmedical prescription opioid use among secondary school classmates (McCabe et al. 2020). Preventing or delaying unhealthy opioid use initiation among youth can reduce later risk for OUD (Office of the Surgeon General 2018).

Medicaid is central to efforts to address substance use among adolescents, including opioid use, given that Medicaid is the single largest insurer of Americans under age 19, covering more than half of that population.<sup>1</sup> In data from 2015 through 2019, 28.5 percent of Medicaid-enrolled adolescents reported substance use in the past year (not including tobacco use), including 3.0 percent reporting unhealthy opioid use and 0.5 percent reporting OUD (Lynch, Clemans-Cope, and Winiski, forthcoming). Medicaid-enrolled youth, who have low incomes and are disproportionately people of color, have a higher risk of negative consequences from unhealthy substance use than other youth because of structural disadvantages, including low family wealth and historically racist policies (Bailey et al. 2017; Fite et al. 2009), including racist substance use policies (Perritt 2020). Through the Early and Periodic Screening, Diagnostic, and Treatment (EPSDT) benefit and other benefits, Medicaid covers screening and intervention services related to substance use. State programs are innovating these services to tailor them to youth (e.g., by expanding school-based health services; Wilkinson et al. 2020), although

shortcomings in the EPSDT benefit have been noted (GAO 2019). Gaps in Medicaid’s coverage of substance use benefits—such as gaps in the ability to provide prevention or early intervention for substance use without a qualifying diagnosis, recovery support services, and harm reduction care—vary across states, and Medicaid policies such as low reimbursement rates may also impede access to care (GAO 2020). Section 1115 waivers offer states a way to test new benefits and approaches in Medicaid, and identifying the most effective Medicaid policies to address adolescent substance use may be an important lever for cost savings, because it can reduce states’ health and criminal justice spending (Degenhardt et al. 2018).

Effective substance use programs for adolescents, which can be funded through braided funding models that combine Medicaid with other sources, include universal community-based preventive interventions and substance use screening surveys through school; selective programs such as family-centered prevention efforts, which focus on youth with elevated risk; and early intervention and treatment programs for youth who have unhealthy substance use (Hawkins et al. 2015). Substance use care can be initiated through many pathways. For example, the American Academy of Pediatrics recommends that pediatricians incorporate universal substance use screening into standard adolescent care by asking patients about substance use, including opioid use (AAP 2016).

The available evidence suggests few communities, schools, or health care delivery systems support robust substance use intervention programs, and adolescents largely do not receive effective substance use prevention or intervention. The few published studies of adolescents with a substance use disorder (SUD) have shown low screening rates and very low treatment rates (Beaton, Shubkin, and Chapman 2016; Harris et al. 2021; US Preventive Services Task Force 2018), including for OUD (Alinsky et al. 2020; Camenga, Colon-Rivera, and Muvvala 2019; Hadland et al. 2018). No recent data demonstrate the prevalence of screening, treatment, other health care use and exposure to prevention messaging among Medicaid-enrolled adolescents with unhealthy opioid use, OUD, or other substance use.

In this study, we provide new detail on the demographic characteristics of and substance use among Medicaid-enrolled adolescents and by different types of unhealthy opioid use and other substance use. We address the following research questions: (1) What is youth’s involvement with schools, prevention programs, pediatric care providers, mental health providers, and, for youth with substance use, treatment? (2) How do rates of screening differ across youth with different substance use and demographic characteristics and among those seen in an emergency department (ED), outpatient setting, or inpatient setting? Understanding these adolescents’ characteristics, involvements, and gaps in care is critical to designing comprehensive, developmentally appropriate, and effective Medicaid policy related to substance use to support adolescents’ healthy development.

# Methods

The National Survey on Drug Use and Health (NSDUH) is an annual, random, nationally representative sample of the US civilian, noninstitutionalized population ages 12 and older that uses a multistage sampling design to assess substance use, mental health, and other health-related issues. After obtaining informed consent, NSDUH uses computer-assisted self-interviews to collect data on substance use. We analyze publicly available, deidentified NSDUH data, merging five years of data from 2015 through 2019 and assessing survey responses for adolescents ages 12 to 19 who were reported to have coverage from Medicaid or the Children’s Health Insurance Program (hereafter Medicaid) at the time of the survey ( $n = 31,680$ ).

For adolescents ages 12 to 19 with Medicaid, we analyzed the demographics, health, health care use, and substance-use-related experiences of five mutually exclusive groups based on reported substance use in the past year: (1) those with no substance use, including no use of the tobacco products asked about in the NSDUH (cigarettes, cigars, and smokeless tobacco, but not vaping); (2) those classified by the NSDUH as having OUD based on reporting opioid use and consequences that meet criteria for opioid dependence or abuse in the *Diagnostic and Statistical Manual of Mental Disorders*, 4th edition (DSM-IV); (3) those with other (non-OUD) risky opioid use, defined as using opioids in a way not directed by a doctor; (4) those classified as having another substance (excluding tobacco and opioids) use disorder based on reporting substance use and consequences that meet criteria for dependence or abuse in the DSM-IV; and (5) those reporting other (non-opioid) substance use. Thus, other substance use included past-year use of alcohol, tobacco, and other substances without a use disorder.<sup>2</sup>

For each category of youth substance use, we examined estimates of demographic and health-related characteristics mostly directly derived from self- or proxy-reported data. Gender was classified by the interviewer. Family income is reported by the NSDUH relative to poverty thresholds. Racial and ethnic categories relied on the limited classifications derived from the US Office of Management and Budget definitions. We relied on NSDUH definitions of heavy alcohol use in the past month that were developed for adults. Substance use treatment was self-reported and does not necessarily comport with guidelines for recommended treatment. Major depressive episode in the past year is as reported by the NSDUH.

To assess young people’s contact with schools, prevention programs, pediatric health care providers, and mental health providers, we examined unadjusted means of past-year school attendance, school-based activities (such as team sports and clubs), school days missed in the past month, religious services attended in the past year, frequency and type of past-year health care visits, and past-year

exposure to prevention programming and substance use programming. Estimates were computed for each of the five categories of youth, and estimates for youth who used substances were compared with estimates for youth who did not use substances. We also assessed substance use among the four categories of youth who used substances by estimating type of substance used, substance-use-related behaviors, and past-year treatment status and type.

To assess whether adolescent patients with OUD, other risky opioid use, other SUDs, or other substance use were more likely to be screened for substance use than adolescents who did not use substances, we examined estimated percentages of adolescents reporting being asked about their use of alcohol, tobacco, and other substances at health care visits. To further assess whether being asked about substances may relate to place of service (defined as ED, outpatient, and inpatient), we also separately examined estimates for the subpopulations who received care in those settings. “Outpatient” was defined as a visit to a doctor’s office, clinic, or other place (besides the ED or inpatient hospital) for medical care.

To assess whether some demographic groups of adolescent patients were less likely to be asked about substance use, we also examined estimates by gender and race and ethnicity. Sample sizes were too small to separately estimate being asked about different types of substances, so we examined estimates of being asked about any substance use.

Our estimation methods included calculating 95 percent confidence intervals for estimates and adopting a two-tailed t-test with  $p < 0.05$  as the threshold for statistical significance. In the analysis where we looked at estimates by type of substance (table 4), we used a Benjamini-Hochberg adjustment with a false discovery rate of 0.05 to adjust for multiple comparisons within each category of youth patients (i.e., defined by any ED, outpatient care, or inpatient care). Analysis weights account for the complex survey design of the data and followed NSDUH guidelines for calculating, suppressing, and reporting estimates. Analysis was conducted using Stata version 15 (StataCorp) and was exempted by the Urban Institute’s Institutional Review Board. Data analysis was conducted from October 2020 to May 2021.

## Results

As table 1 shows, Medicaid-enrolled adolescents who used substances during our study period of 2015 through 2019 were socioeconomically diverse, as were their counterparts who did not use substances. Though adolescents who used substances were older than adolescents who did not, more than one-

quarter of each of the substance-using populations we studied were in our study's younger age group (ages 12 to 15). Adolescents with OUD or other risky opioid use were more likely to be white and less likely to be Hispanic/Latinx than adolescents who did not use substances. Adolescents with OUD or engaging in other risky opioid use were disproportionately female (57.1 percent and 56.0 percent, respectively).

Table 1 also shows that Medicaid-enrolled adolescents who used substances had more health problems than the population not using substances. Those with OUD were about twice as likely to have fair or poor health and 10 times more likely to have a sexually transmitted disease than were adolescents who did not use substances. Adolescents who used substances were substantially more likely to have had a major depressive episode, including 43.2 percent of those with OUD and 23.4 percent of those with other risky opioid use.

TABLE 1

Unadjusted Demographic and Health Characteristics of Medicaid-Enrolled Adolescents (Ages 12 to 19), by Type of Substance Use Disorder and Status Using Alcohol or Substances, 2015–19

	No Substance or Alcohol Use^	ODU	Other Risky Opioid Use (No OUD)	Other Substance or Alcohol Use Disorder (and No OUD or Risky Opioid Use)	Other Substance or Alcohol Use (No Use Disorder/ Other Risky Opioid Use)
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
<b>Age group</b>					
12–15	65.4 (64.7, 66.1)	37.2 (30.4, 44.5)	*** 36.8 (33.3, 40.4)	*** 25.7 (22.0, 29.9)	*** 32.1 (30.8, 33.3)
16–19	34.6 (33.9, 35.3)	62.8 (55.5, 69.6)	*** 63.2 (59.6, 66.7)	*** 74.3 (70.1, 78.0)	*** 67.9 (66.7, 69.2)
<b>Gender</b>					
Boys	51.7 (50.6, 52.7)	42.9 (34.6, 51.6)	** 44.0 (39.4, 48.8)	*** 53.3 (49.3, 57.2)	*** 48.2 (46.6, 49.7)
Girls	48.3 (47.3, 49.4)	57.1 (48.4, 65.4)	** 56.0 (51.2, 60.6)	*** 46.7 (42.8, 50.7)	*** 51.8 (50.3, 53.4)
<b>Race and Hispanic ethnicity</b>					
White	32.9 (31.9, 34.0)	49.5 (39.2, 59.8)	*** 40.0 (36.4, 43.6)	*** 37.6 (33.6, 41.8)	*** 40.4 (39.0, 41.9)
Black/African American	23.1 (22.2, 24.0)	16.6 (11.0, 24.4)	22.2 (19.5, 25.1)	19.7 (16.7, 23.1)	** 19.7 (18.4, 21.0)
Native American/Alaska Native	0.9 (0.8, 1.0)	1.0 (0.4, 2.6)	1.2 (0.7, 1.9)	1.5 (1.1, 2.1)	** 1.2 (0.9, 1.5)
Native Hawaiian/other Pacific Islander	0.6 (0.4, 0.8)	0.5 (0.1, 2.0)	0.5 (0.1, 1.8)	0.6 (0.3, 1.1)	0.5 (0.3, 0.8)
Asian	4.6 (4.1, 5.1)	4.2 (1.6, 10.2)	2.8 (1.9, 4.3)	*** 1.8 (1.1, 3.1)	*** 2.7 (2.2, 3.3)
Two or more races	3.1 (2.8, 3.4)	3.9 (2.1, 7.1)	3.8 (2.6, 5.3)	3.9 (2.9, 5.2)	*** 3.9 (3.5, 4.5)
Hispanic/Latinx	34.9 (33.7, 36.0)	24.3 (18.2, 31.6)	*** 29.6 (26.0, 33.4)	*** 34.8 (31.6, 38.2)	*** 31.6 (30.0, 33.2)
<b>Metropolitan statistical area</b>					
Large MSA	53.6 (52.2, 54.9)	52.8 (42.2, 63.3)	49.8 (45.5, 54.1)	55.7 (52.1, 59.2)	50.8 (49.3, 52.4)
Small MSA	30.9 (29.5, 32.2)	35.0 (26.4, 44.7)	32.3 (28.5, 36.2)	28.0 (25.5, 30.7)	31.6 (30.1, 33.1)
Rural (nonmetropolitan)	15.6 (14.7, 16.5)	12.1 (8.0, 18.1)	18.0 (15.1, 21.2)	16.3 (14.0, 18.8)	17.6 (16.5, 18.8)
<b>Family income as a % of the federal poverty level</b>					
< 100	46.8 (45.7, 47.9)	43.8 (36.2, 51.7)	44.0 (40.0, 48.1)	40.5 (36.9, 44.3)	*** 40.8 (39.5, 42.1)
100–200	32.8 (31.9, 33.8)	29.5 (21.6, 38.9)	33.6 (29.8, 37.6)	33.4 (30.0, 37.0)	34.0 (32.7, 35.3)
> 200	20.4 (19.6, 21.2)	26.7 (18.6, 36.7)	22.4 (19.2, 25.9)	26.0 (23.3, 29.0)	*** 25.2 (23.9, 26.5)
<b>Health status</b>					
Excellent, very good, or good	94.1 (93.5, 94.6)	84.6 (77.7, 89.6)	*** 90.3 (87.1, 92.7)	*** 89.2 (87.0, 91.0)	*** 92.7 (91.9, 93.5)
Fair or poor	5.9 (5.4, 6.5)	15.4 (10.4, 22.3)	*** 9.7 (7.3, 12.9)	*** 10.8 (9.0, 13.0)	*** 7.3 (6.5, 8.1)

	No Substance or Alcohol Use <sup>^</sup>	OAD		Other Risky Opioid Use (No OUD)		Other Substance or Alcohol Use Disorder (and No OUD or Risky Opioid Use)		Other Substance or Alcohol Use (No Use Disorder/ Other Risky Opioid Use)	
	% (95% CI)	% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)	
Major depressive episode	9.4 (8.8, 9.9)	43.2 (33.2, 53.8)	***	23.4 (20.0, 27.1)	***	24.9 (21.9, 28.1)	***	16.8 (15.7, 17.9)	***
Number of chronic conditions <sup>a</sup>									
0	79.4 (78.6, 80.1)	65.0 (55.4, 73.5)	***	73.3 (69.6, 76.7)	***	78.0 (74.5, 81.1)		77.7 (76.8, 78.6)	***
1	16.1 (15.4, 16.8)	25.0 (17.7, 34.1)	**	19.8 (16.6, 23.4)	**	16.6 (13.8, 20.0)		18.1 (17.2, 19.0)	***
≥ 2	4.5 (4.1, 5.0)	10.0 (5.9, 16.4)	**	6.9 (5.4, 8.8)	***	5.4 (3.9, 7.5)		4.2 (3.7, 4.9)	
Sexually transmitted infection, past year	0.7 (0.6, 0.9)	8.3 (4.2, 16.0)	***	4.4 (2.9, 6.6)	***	5.3 (4.0, 7.1)	***	2.5 (2.1, 3.1)	***
Sample size	20,590	213		1,084		1,389		8,404	
Annual population count (weighted estimate)	38,318,571	384,615		1,978,873		2,534,988		15,793,665	

Source: Estimates are computed from Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health (NSDUH), 2015–19.

Notes: CI = confidence interval. OUD = opioid use disorder. All racial categories are non-Hispanic/Latinx. Use disorder is defined as meeting criteria for dependence on or abuse of alcohol or drugs in the *Diagnostic and Statistical Manual of Mental Disorders*, 4th ed., based on self-reported substance use and consequences. Non-OUD substances are defined as marijuana, cocaine, hallucinogens, inhalants, methamphetamine, ecstasy, lysergic acid diethylamide (LSD), phenylcyclohexyl piperidine (PCP), or nonmedical use of sedatives, stimulants, or tranquilizers. “Other risky opioid use” includes individuals the NSDUH identifies as “misusing” opioids because they report using opioids in a way not directed by a doctor. This analysis takes accounts for the NSDUH’s complex survey design.

\*\*\*/\*\* The estimate for the reference group (^) differs significantly from the estimate for the corresponding category (e.g., the estimate for respondents with opioid use disorder differs significantly from the estimate for respondents with no substance or alcohol use) at the 0.01/0.05 level, respectively, using a two-tailed test of significance.

<sup>a</sup> Chronic conditions include high blood pressure, heart conditions, diabetes, cancer, asthma, COPD, HIV/AIDS, hepatitis B, hepatitis C, cirrhosis, and kidney disease.

Most adolescents in each of our study groups attended school and participated in school-based activities such as sports and clubs in the past year (table 2). However, adolescents who used substances were generally substantially more likely to have missed school days in the past month. More than half of all adolescent populations studied also attended religious services in the past year, including more than one in three who attended three or more services in the year. Adolescents who used substances were much more likely to report criminal justice involvement than adolescents who did not use substances.

Most adolescents had a past-year health care visit (any ED, outpatient, or inpatient visit). Adolescents who used substances (and were older, as described above) were more likely to have had a medical visit than adolescents who did not use substances. Adolescents who used substances were especially likely to have had multiple visits, an ED visit, an inpatient stay, or mental health treatment. Almost two-thirds (63.7 percent) of those with OUD and roughly 47 percent of those with other risky opioid use or other SUD had at least one past-year ED visit, compared with 32.0 percent among adolescents who did not use substances. Despite substance use and high levels of major depressive episodes, only 30.1 percent of those with OUD and roughly 23 percent of those with other risky opioid use or other SUD had any past-year mental health treatment (table 2).

Most adolescents were exposed to a substance use prevention message outside of school. However, relatively few adolescents had past-year involvement in specific types of prevention programs; no more than about one in five was involved with a substance use prevention program outside of school, violence prevention program, or program to prevent pregnancy or sexually transmitted disease. In addition, only a small fraction participated in a program or meeting to help with their own or a family member's substance use; roughly 16 percent of those with OUD and roughly 8 percent of those with other risky opioid use or other SUD participated in such programs or meetings (table 2).

Substance-using adolescents were involved in related risky behaviors including driving after substance use, which was reported by 29.3 percent of adolescents with OUD and 21.3 percent of adolescents with other risky opioid use. In addition, 8.8 percent of adolescents with OUD and 1.3 percent of adolescents with other risky opioid use reported injecting substances.

Substance use treatment was highest among adolescents with OUD, but fewer than one in five of those adolescents received treatment. Among adolescents with OUD, only 6.9 percent had buprenorphine treatment and 8.6 percent had treatment for alcohol (table 3). Very few other substance-using adolescents received treatment. Though few substance-using adolescents report

making a past-year effort to receive substance use treatment but not receiving any, close to 1 in 20 adolescents with OUD (4.5 percent) sought but did not receive treatment.

Generally, about half or more of adolescents in the populations studied who had one or more ED, outpatient, or inpatient visits were asked about substance use at medical visits, with higher rates among adolescents who used substances (table 4). Among adolescents who had an ED, outpatient, or inpatient visit, those with OUD and those with other risky opioid use were more likely to be asked about substance use than those who did not use substances (68.2 percent and 66.7 percent versus 53.1 percent, respectively). Differences in the share of adolescents asked about substance use at medical visits were also observed by age and sex (table 5). Among those who had ED, outpatient, or inpatient visits, older adolescents were substantially more likely to be asked about substance use than their younger counterparts (70.4 percent versus 47.5 percent). Among those who had one or more ED, outpatient, or inpatient visits, girls were more likely than boys to be asked about substance use (63.1 percent versus 53.3 percent).

TABLE 2

Unadjusted Percentage of Medicaid-Enrolled Adolescents (Ages 12 to 19) Involved with Service Providers at Schools, at Religious Institutions, at Health Care Facilities, and in Prevention Programs, by Type of Substance Use Disorder and Status Using Alcohol or Substances, 2015–19

	No Substance or Alcohol Use <sup>^</sup>	OU D	Other Risky Opioid Use (No OU D)	Non-OU D Substance or Alcohol Use Disorder (and No OU D or Risky Opioid Use)	Other Substance or Alcohol Use (No Use Disorder or Other Risky Opioid Use)
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
Attended school, past year	94.0 (93.6, 94.5)	79.4 (71.3, 85.7) ***	83.7 (80.6, 86.4) ***	80.8 (77.4, 83.7) ***	84.6 (83.4, 85.8) ***
Number of school-based activities <sup>a</sup> in past year					
0	21.2 (20.5, 21.9)	15.8 (11.0, 22.2)	18.5 (15.0, 22.5)	23.9 (20.3, 27.8)	20.9 (19.4, 22.5)
1	29.3 (28.5, 30.1)	26.0 (17.2, 37.4)	26.8 (22.5, 31.6)	26.9 (23.4, 30.6)	27.4 (25.8, 29.0) **
≥ 2	49.5 (48.6, 50.4)	58.2 (48.5, 67.3)	54.7 (49.5, 59.8) **	49.2 (44.7, 53.8)	51.7 (49.9, 53.5) **
Number of school days missed in past month					
Zero days	80.6 (79.6, 81.6)	S	61.1 (53.7, 68.0) ***	50.9 (44.1, 57.6) ***	66.0 (63.8, 68.3) ***
≤ 1 week	17.3 (16.3, 18.3)	S	32.2 (25.7, 39.3) ***	36.0 (29.9, 42.6) ***	30.1 (27.9, 32.3) ***
> 1 week	2.1 (1.7, 2.6)	8.7 (3.7, 18.9)	6.8 (3.8, 11.6) **	13.1 (9.1, 18.5) ***	3.9 (3.2, 4.8) ***
Number of religious services attended in past year					
0	47.0 (46.0, 48.1)	44.9 (35.1, 55.1)	43.4 (40.1, 46.6) **	48.4 (45.0, 51.9)	47.8 (46.3, 49.3)
1 or 2	15.0 (14.1, 15.9)	17.6 (12.5, 24.3)	19.3 (16.0, 23.0) **	17.5 (14.6, 20.7)	16.4 (15.4, 17.5) **
≥ 3	38.0 (36.9, 39.1)	37.5 (28.0, 48.0)	37.3 (33.9, 40.9)	34.1 (30.5, 37.9) **	35.8 (34.5, 37.1) ***
Criminal justice involvement, <sup>b</sup> past year	2.9 (2.6, 3.2)	26.7 (19.3, 35.6) ***	15.6 (13.1, 18.5) ***	23.4 (20.1, 27.1) ***	9.3 (8.4, 10.3) ***
Health care use, past year					
Any health care visit (ED, outpatient, or inpatient), past year	81.5 (80.8, 82.2)	89.4 (81.0, 94.4) **	88.3 (85.6, 90.5) ***	83.3 (81.2, 85.2)	83.1 (81.8, 84.4) **
≥ 2 health care visits	60.0 (59.2, 60.8)	80.8 (73.1, 86.7) ***	75.2 (71.1, 78.9) ***	69.7 (66.4, 72.9) ***	66.5 (65.0, 68.0) ***
≥ 3 health care visits	43.7 (42.9, 44.5)	69.6 (60.7, 77.3) ***	58.2 (53.8, 62.5) ***	54.6 (50.9, 58.3) ***	48.5 (46.9, 50.1) ***

	No Substance or Alcohol Use <sup>^</sup>	OID		Other Risky Opioid Use (No OUD)		Non-OUD Substance or Alcohol Use Disorder (and No OUD or Risky Opioid Use)		Other Substance or Alcohol Use (No Use Disorder or Other Risky Opioid Use)	
	% (95% CI)	% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)	
Any ED visit	32.0 (31.1, 32.9)	63.7 (54.8, 71.7)	***	46.8 (43.2, 50.5)	***	46.8 (43.4, 50.2)	***	39.2 (37.6, 40.8)	***
≥ 2 ED visits	16.1 (15.4, 16.8)	44.7 (35.8, 54.0)	***	27.5 (24.4, 30.9)	***	26.6 (23.8, 29.7)	***	21.5 (20.2, 22.9)	***
Any outpatient visit	77.7 (76.9, 78.4)	87.1 (78.9, 92.4)	***	85.1 (82.1, 87.7)	***	78.4 (75.4, 81.0)		79.2 (77.7, 80.6)	
≥ 2 outpatient visits	60.1 (59.3, 60.9)	76.7 (67.7, 83.8)	***	68.0 (64.1, 71.7)	***	62.9 (59.3, 66.4)		62.5 (60.9, 64.1)	***
Any inpatient visit	6.0 (5.6, 6.5)	20.6 (12.8, 31.5)	***	13.4 (10.5, 16.8)	***	13.4 (10.6, 16.8)	***	8.8 (8.0, 9.6)	***
≥ 2 inpatient visits	3.2 (3.0, 3.5)	14.7 (8.3, 24.9)	***	9.4 (7.3, 12.0)	***	8.5 (6.6, 10.9)	***	5.3 (4.8, 6.0)	***
<b>Mental health care visit, past year</b>									
Any mental health treatment	12.4 (11.8, 13.1)	30.1 (22.9, 38.5)	***	23.2 (19.8, 26.8)	***	23.5 (21.0, 26.2)	***	15.0 (14.2, 15.9)	***
Inpatient mental health visit	3.0 (2.6, 3.4)	9.0 (4.7, 16.4)	**	6.4 (4.9, 8.2)	***	9.9 (7.9, 12.2)	***	4.4 (3.9, 5.0)	***
Residential mental health treatment <sup>c</sup>	1.1 (1.0, 1.3)	S		3.7 (2.6, 5.2)	***	7.2 (5.3, 9.7)	***	2.8 (2.2, 3.6)	***
Outpatient mental health visit	10.7 (10.2, 11.3)	26.7 (20.0, 34.7)	***	21.5 (18.3, 25.0)	***	19.7 (17.0, 22.7)	***	13.0 (12.1, 13.9)	***
Outpatient mental health treatment received in school setting	1.8 (1.6, 2.0)	7.1 (3.8, 12.8)	**	2.6 (1.6, 4.1)		2.3 (1.6, 3.4)		1.4 (1.1, 1.8)	**
<b>Exposure to prevention or substance use programming, past year<sup>d</sup></b>									
Substance use prevention message outside of school	62.9 (61.9, 63.8)	68.7 (57.9, 77.8)		64.4 (59.8, 68.8)		66.7 (62.4, 70.7)		64.3 (62.4, 66.2)	
Substance use prevention program outside of school (e.g., alcohol, tobacco)	12.4 (11.7, 13.2)	20.2 (15.1, 26.3)	***	13.5 (10.7, 16.9)		15.1 (12.0, 18.9)		10.5 (9.4, 11.7)	***
Program or meeting to help with own or family member's substance use, (e.g., Alcoholics Anonymous, Alateen, or	4.1 (3.8, 4.6)	16.1 (10.1, 24.7)	***	7.7 (5.1, 11.5)	**	8.7 (6.6, 11.5)	***	4.6 (3.9, 5.3)	

	No Substance or Alcohol Use <sup>^</sup>	OUD	Other Risky Opioid Use (No OUD)	Non-OUD Substance or Alcohol Use Disorder (and No OUD or Risky Opioid Use)	Other Substance or Alcohol Use (No Use Disorder or Other Risky Opioid Use)
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
individual or group counseling)					
Violence prevention program	15.4 (14.6, 16.2)	20.2 (13.4, 29.4)	15.0 (12.5, 17.8)	14.8 (12.0, 18.1)	12.3 (11.4, 13.3) ***
Program to prevent pregnancy or sexually transmitted disease	7.7 (7.2, 8.2)	12.5 (7.4, 20.3)	7.5 (5.6, 10.0)	9.3 (7.0, 12.2)	8.5 (7.7, 9.4)
<b>Sample size</b>	<b>20,590</b>	<b>213</b>	<b>1,084</b>	<b>1,389</b>	<b>8,404</b>
<b>Annual population count (weighted estimate)</b>	<b>38,318,571</b>	<b>384,615</b>	<b>1,978,873</b>	<b>2,534,988</b>	<b>15,793,665</b>

**Source:** Estimates are computed from Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health (NSDUH), 2015–19.

**Notes:** CI = confidence interval. OUD = opioid use disorder. ED = emergency department. Use disorder is defined as meeting criteria for dependence on or abuse of alcohol or drugs in the *Diagnostic and Statistical Manual of Mental Disorders*, 4th ed., based on self-reported substance use and consequences. Non-OUD substances are defined as marijuana, cocaine, hallucinogens, inhalants, methamphetamine, ecstasy, lysergic acid diethylamide (LSD), phenylcyclohexyl piperidine (PCP), or nonmedical use of sedatives, stimulants, or tranquilizers. “Other risky opioid use” includes individuals the NSDUH identifies as “misusing” opioids because they report using opioids in a way not directed by a doctor. This analysis accounts for the NSDUH’s complex survey design.

\*\*\*/\*\* The estimate for the reference group (^) differs significantly from the estimate for the corresponding category (e.g., the estimate for respondents with opioid use disorder differs significantly from the estimate for respondents with no substance or alcohol use) at the 0.01/0.05 level, respectively, using a two-tailed test of significance.

“S” data were suppressed using the NSDUH’s suppression criteria for unreliable estimates.

<sup>a</sup> School-based activities include team-based sports, cheerleading, choir, band, student government, and other clubs. The NSDUH asks this question only of youth ages 12 to 17.

<sup>b</sup> Criminal justice involvement includes people who were booked, arrested, on parole, or on probation.

<sup>c,d</sup> The NSDUH asks these questions (including all variables in the “exposure to prevention or substance use programming” section) only of youth ages 12 to 17.

TABLE 3

**Unadjusted Substance Use and Substance Use Treatment Characteristics of Medicaid-Enrolled Adolescents (Ages 12 to 19), by Type of Substance Use Disorder and Status Using Alcohol or Substances, 2015–19**

	OU D <sup>^</sup> % (95% CI)	Other Risky Opioid Use (no OUD) % (95% CI)		Other Substance or Alcohol Use Disorder (and No OUD or Risky Opioid Use) % (95% CI)	Other Substance or Alcohol Use (No Use Disorder or Other Risky Opioid Use) % (95% CI)	
<b>Substance use</b>						
Alcohol use, past year	74.3 (65.4, 81.6)	61.4 (58.2, 64.5)	***	82.3 (79.1, 85.1)	70.9 (69.5, 72.3)	
Tobacco use, <sup>a</sup> past year	61.7 (53.1, 69.7)	46.5 (42.9, 50.1)	***	60.3 (56.8, 63.7)	38.1 (36.5, 39.6)	***
Marijuana use, past year	67.0 (58.5, 74.5)	51.8 (47.3, 56.2)	***	79.3 (76.0, 82.3)	43.3 (41.6, 45.0)	***
Alcohol use disorder, past year	37.5 (28.2, 47.9)	11.7 (8.9, 15.3)	***	46.2 (41.9, 50.5)	S	
Marijuana use disorder, past year	30.5 (22.9, 39.4)	15.0 (12.1, 18.5)	***	57.0 (53.6, 60.5)	S	
Heavy alcohol use, <sup>b</sup> past month	16.9 (11.2, 24.7)	4.7 (3.3, 6.6)	***	8.2 (6.2, 10.8)	1.7 (1.4, 2.1)	***
People who injected substances, past year	8.8 (5.2, 14.4)	1.3 (0.6, 2.8)	***	0.1 (0.0, 0.8)	0.1 (0.0, 0.2)	***
Driving after substance use, <sup>c</sup> past year	29.3 (20.0, 40.7)	21.3 (17.8, 25.2)		26.1 (22.6, 29.9)	4.8 (4.1, 5.7)	***
<b>Treatment for substance use, past year</b>						
Any treatment for alcohol or other substance use	18.1 (11.8, 26.8)	5.1 (3.7, 6.9)	***	8.6 (6.6, 11.1)	1.4 (1.1, 1.7)	***
Buprenorphine treatment <sup>d</sup>	6.9 (3.2, 13.9)	2.5 (1.5, 4.1)		0.7 (0.3, 1.2)	0.4 (0.2, 0.6)	**
Any treatment for alcohol use	8.6 (4.2, 16.6)	2.5 (1.6, 4.1)	**	4.7 (3.3, 6.7)	0.4 (0.3, 0.6)	***
No treatment for alcohol or substance use	81.9 (73.2, 88.2)	94.9 (93.1, 96.3)	***	91.4 (88.9, 93.4)	98.6 (98.3, 98.9)	***
Made an effort to receive treatment for alcohol or substance use but didn't receive any	4.5 (1.5, 12.6)	0.9 (0.3, 2.5)		0.3 (0.1, 0.9)	0.1 (0.0, 0.2)	
<b>Sample size</b>	<b>213</b>	<b>1,084</b>		<b>1,389</b>	<b>8,404</b>	
<b>Annual population count (weighted estimate)</b>	<b>384,615</b>	<b>1,978,873</b>		<b>2,534,988</b>	<b>15,793,665</b>	

**Source:** Estimates are computed from Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health (NSDUH), 2015–19.

**Notes:** OUD = opioid use disorder. CI = confidence interval. Use disorder is defined as meeting criteria for dependence or abuse of alcohol or drugs in the *Diagnostic and Statistical Manual of Mental Disorders*, 4th ed., based on self-reported substance use and consequences. Non-OUD substances are defined as marijuana, cocaine, hallucinogens, inhalants, methamphetamine, ecstasy, lysergic acid diethylamide (LSD), phenylcyclohexyl piperidine (PCP), or nonmedical use of sedatives, stimulants, or tranquilizers. "Other risky opioid use" includes individuals the NSDUH identifies as "misusing" opioids because they report using opioids in a way not directed by a doctor. This analysis accounts for the NSDUH's complex survey design.

\*\*\*/\*\* The estimate for the reference group (^) differs significantly from the estimate for the corresponding category (e.g., the estimate for respondents with risky opioid use differs significantly from the estimate for respondents with opioid use disorder) at the 0.01/0.05 level, respectively, using a two-tailed test of significance.

"S" data were suppressed using the NSDUH's suppression criteria for unreliable estimates.

<sup>a</sup>Tobacco includes cigars, cigarettes, pipes, and smokeless tobacco products. The NSDUH does not ask about e-cigarette use.

<sup>b</sup>Heavy alcohol use is computed using NSDUH definitions that were developed for adults and is defined as drinking five or more drinks on the same occasion for boys or four or more drinks on the same occasion for girls on each of 5 or more days in the past 30 days. For this variable, “occasion” means at the same time or within a couple of hours of each other.

<sup>c</sup>This variable asks respondents if they have driven under the influence of the following substances: marijuana, cocaine or crack, heroin, hallucinogens, inhalants, and methamphetamine.

<sup>d</sup>Buprenorphine treatment includes any past-year buprenorphine use that was not classified as “misuse” (i.e., using Suboxone, generic buprenorphine, or other pain relievers in a way not directed by a doctor).

**TABLE 4**

**Unadjusted Percentage of Medicaid-Enrolled Adolescent Patients (Ages 12 to 19) Asked about Substance Use, by Type of Substance Use Disorder and Status Using Alcohol or Substances, 2015–19**

	No Substance or Alcohol Use <sup>a</sup>	ODU	Other Risky Opioid Use (No OUD)	Non-ODU Substance or Alcohol Use Disorder (and No OUD or Risky Opioid Use)	Other Substance or Alcohol Use (No Use Disorder or Other Risky Opioid Use)
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
<b>Adolescents with ≥ 1 ED, outpatient, or inpatient visit</b>					
<i>Asked about alcohol, tobacco, or substance use, past year</i>	53.1 (51.8, 54.4)	68.2 (57.8, 77.0) **	66.7 (62.9, 70.2) **	78.3 (75.3, 81.1) **	65.8 (64.2, 67.5) **
Asked about tobacco use	48.7 (47.5, 49.9)	62.7 (51.6, 72.6) **	58.8 (54.7, 62.8) **	67.6 (64.4, 70.7) **	59.6 (57.7, 61.5) **
Asked about alcohol use	44.6 (43.3, 46.0)	58.0 (47.1, 68.2) **	54.0 (49.9, 58.0) **	60.7 (57.4, 63.9) **	53.2 (51.4, 55.0) **
Asked about substance use other than tobacco and alcohol	38.5 (37.2, 39.8)	58.4 (47.2, 68.9) **	49.4 (45.5, 53.2) **	62.4 (59.0, 65.7) **	50.6 (48.8, 52.4) **
<b>Adolescents with ≥ 1 ED visit</b>					
<i>Asked about alcohol, tobacco, or substance use, past year</i>	55.9 (54.2, 57.5)	69.2 (58.0, 78.5) **	70.7 (65.5, 75.4) **	81.4 (78.2, 84.3) **	68.6 (66.2, 71.0) **
Asked about tobacco use	51.1 (49.4, 52.8)	62.2 (50.6, 72.5) **	60.9 (55.5, 66.0) **	70.6 (66.3, 74.6) **	62.2 (59.5, 64.8) **
Asked about alcohol use	47.3 (45.6, 49.0)	S	56.5 (51.9, 61.0) **	64.2 (59.8, 68.3) **	56.5 (53.8, 59.1) **
Asked about substance use other than tobacco and alcohol	41.2 (39.8, 42.6)	60.0 (48.0, 70.8) **	52.1 (46.2, 57.9) **	66.6 (61.2, 71.6) **	53.5 (50.8, 56.1) **
<b>Adolescents with ≥ 1 outpatient visit</b>					

	No Substance or Alcohol Use <sup>^</sup>	ODD	Other Risky Opioid Use (No ODD)	Non-ODD Substance or Alcohol Use Disorder (and No ODD or Risky Opioid Use)	Other Substance or Alcohol Use (No Use Disorder or Other Risky Opioid Use)
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
<i>Asked about alcohol, tobacco, or substance use, past year</i>	53.8 (52.5, 55.2)	68.3 (57.0, 77.8) **	67.1 (63.2, 70.8) **	78.6 (75.0, 81.9) **	66.5 (64.7, 68.2) **
Asked about tobacco use	49.5 (48.2, 50.7)	62.6 (50.9, 72.9) **	59.0 (54.7, 63.1) **	68.1 (64.4, 71.6) **	60.2 (58.2, 62.2) **
Asked about alcohol use	45.4 (44.0, 46.8)	58.4 (47.6, 68.5) **	54.5 (50.1, 58.8) **	60.3 (56.6, 63.8) **	53.8 (51.8, 55.7) **
Asked about substance use other than tobacco and alcohol	39.2 (37.8, 40.6)	58.9 (47.5, 69.5) **	49.7 (45.7, 53.8) **	62.2 (58.3, 65.9) **	51.3 (49.5, 53.1) **
<b>Adolescents with ≥ 1 inpatient visit</b>					
<i>Asked about alcohol, tobacco, or substance use, past year</i>	56.5 (52.8, 60.1)	S	74.9 (65.6, 82.5) **	88.1 (82.0, 92.3) **	76.5 (71.8, 80.6) **
Asked about tobacco use	51.3 (47.4, 55.2)	S	67.7 (57.2, 76.7) **	75.5 (67.2, 82.2) **	70.6 (66.1, 74.8) **
Asked about alcohol use	49.6 (45.6, 53.7)	S	62.5 (52.4, 71.6) **	71.5 (62.4, 79.1) **	64.8 (59.8, 69.6) **
Asked about substance use other than tobacco and alcohol	42.7 (39.1, 46.4)	S	59.5 (49.9, 68.5) **	78.2 (70.6, 84.3) **	63.2 (57.7, 68.4) **
<b>Sample size</b>	<b>20,590</b>	<b>213</b>	<b>1,084</b>	<b>1,389</b>	<b>8,404</b>
<b>Annual population count (weighted estimate)</b>	<b>38,318,571</b>	<b>384,615</b>	<b>1,978,873</b>	<b>2,534,988</b>	<b>15,793,665</b>

**Source:** Estimates are computed from Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health (NSDUH), 2015–19.

**Notes:** CI = confidence interval. ODD = opioid use disorder. ED = emergency department. Use disorder is defined as meeting criteria for dependence or abuse of alcohol or drugs in the *Diagnostic and Statistical Manual of Mental Disorders*, 4th ed., based on self-reported substance use and consequences. Non-ODD substances are defined as marijuana, cocaine, hallucinogens, inhalants, methamphetamine, ecstasy, lysergic acid diethylamide (LSD), phenylcyclohexyl piperidine (PCP), or nonmedical use of sedatives, stimulants, or tranquilizers. “Other risky opioid use” includes individuals the NSDUH identifies as “misusing” opioids because they report using opioids in a way not directed by a doctor. This analysis accounts for the NSDUH’s complex survey design.

\*\* The estimate for the reference group (^) differs significantly from the estimate for the corresponding category (e.g., the estimate for respondents with opioid use disorder differs significantly from the estimate for respondents with no substance or alcohol use) at the 0.05 level, using a two-tailed test of significance and the Benjamini-Hochberg procedure to control the false discovery rate.

“S” data were suppressed using the NSDUH’s suppression criteria for unreliable estimates.

TABLE 5

### Unadjusted Percentage of Medicaid-Enrolled Adolescent Patients (Ages 12 to 19) Asked about Substance Use, by Demographic Group, 2015–19

By age group and gender

	Ages 12–15 <sup>^</sup>	Ages 16–19	Boys <sup>^</sup>	Girls	
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	
<b>Adolescents with ≥ 1 ED, outpatient, or inpatient visit</b>					
Asked about alcohol, tobacco, or substance use, past year	47.5 (46.3, 48.7)	70.4 (69.1, 71.7)	*** 53.3 (51.9, 54.7)	63.1 (61.9, 64.2)	***
<b>Adolescents with ≥ 1 ED visit</b>					
Asked about alcohol, tobacco, or substance use, past year	51.1 (49.5, 52.8)	73.5 (71.8, 75.1)	*** 56.0 (54.1, 57.9)	67.4 (65.9, 68.8)	***
<b>Adolescents with ≥ 1 outpatient visit</b>					
Asked about alcohol, tobacco, or substance use, past year	48.0 (46.7, 49.3)	71.0 (69.7, 72.3)	*** 54.0 (52.4, 55.5)	63.6 (62.5, 64.8)	***
<b>Adolescents with ≥ 1 inpatient visit</b>					
Asked about alcohol, tobacco, or substance use, past year	54.2 (50.2, 58.2)	78.2 (74.6, 81.3)	*** 61.1 (56.7, 65.3)	70.8 (67.9, 73.6)	***
<b>Sample size</b>	<b>18,021</b>	<b>13,659</b>	<b>15,868</b>	<b>15,812</b>	
<b>Annual population count (weighted estimate)</b>	<b>31,645,060</b>	<b>27,365,652</b>	<b>29,797,768</b>	<b>29,212,944</b>	

**Source:** Estimates are computed from Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health (NSDUH), 2015–19.

**Notes:** CI = confidence interval. ED = emergency department. The analysis accounts for the NSDUH's complex survey design.

\*\*\*/\*\* The estimates for the three reference groups (^) differ significantly from the estimates for their corresponding categories (e.g., the estimate for respondents ages 16 to 19 differs significantly from the estimate for respondents ages 12 to 15) at the 0.01/0.05 level, respectively, using a two-tailed test of significance.

## Discussion

We assessed substance use screening and treatment, overall health care use, exposure to prevention messages, and other factors for Medicaid-enrolled adolescents, focusing on subgroups with unhealthy opioid use. Medicaid-enrolled youth with unhealthy opioid use reported high levels of engagement with health care professionals and school, yet only about half reported receiving screening conversations about substance use, and even fewer received substance use treatment (Santo et al. 2021). This study found that among Medicaid-enrolled adolescent patients with OUD or risky opioid use with one or more health care visits, only about two-thirds received any substance use screening in the past year, although multiple visits were common among these groups. Older youth (ages 16 to 19) and girls were screened for substance use more often than younger youth (ages 12 to 15) and boys. Low treatment rates for youth with risky opioid use (5.1 percent) and OUD (18.1 percent) were consistent across subgroups, consistent with previous research (Santo et al. 2021). More than a quarter of youth with unhealthy opioid use and a third of youth with OUD received mental health care, a critical health care contact that could be leveraged to access effective substance use care.

Findings from this study were broadly consistent with previous research. For example, pediatricians' self-reported rates of routine substance use screening (mostly not using a validated screener) are generally about 50 to 86 percent (Johnston et al. 2020). In addition, our findings are generally consistent with those of other studies showing low treatment rates for youth with unhealthy opioid use; however, buprenorphine treatment rates in our study are slightly higher than in some previous studies (Alinsky et al. 2020), although still extremely low, likely because of the use of more recent data reflecting increasing use of medication treatment more generally (Ford, Bearman, and Moody 1999). However, most nationally representative studies of adolescent substance use, such as Monitoring the Future, do not appear to explore screening, use of health care, or several other estimates presented above (e.g., the prevalence of injection drug use; Wilson et al. 2004). In addition, this paper studied detailed disaggregation of subgroups of adolescents with substance use, and some findings can be used to better understand more aggregated findings in previous research. For example, previous research finds that older adolescents are generally less likely to receive medical care (Patnode et al. 2020), yet we found that adolescents who used substances (and were older, as described in our study) were much more likely to have had a medical visit—and thus more opportunities to be screened and referred to higher levels of care—than were adolescents who did not use substances.

## Limitations

This study has several limitations. The sample excludes some adolescents likely to have relatively high rates of substance use, including youth experiencing homelessness and not using a shelter and youth who are incarcerated or in the military. Because the Medicaid question was point in time, our sample may also include adolescents who did not have Medicaid when they had a health care visit or may exclude some adolescents who did have Medicaid when they had a past-year medical visit. The NSDUH data we use are mostly self- or proxy-reported and thus subject to recall and social desirability biases, which may vary by the characteristics we study. In addition, the measure of tobacco use does not include e-cigarette use, which likely biases the tobacco measure substantially. In addition, the survey does not determine what type of substance use screener (e.g., a screener validated for adolescents) if any was used, and research demonstrates that screening methods have a significant impact on effectiveness (Wilson et al. 2004). Sample sizes were limited, which necessitated merging multiple years of data for analysis. Interviewer classification of gender may not comport with self-reported gender. We do not account for pregnancy, which may be a factor in differences observed by gender, given arguably more consistent and long-standing guidelines for screening during pregnancy and the increased harms from substance use during pregnancy to girls and their children. Despite these limitations, our findings offer up-to-date information that capitalizes on the strengths of the NSDUH, the only survey large enough to support nationally representative estimates of substance use by type of substance. Further data on health care provider type, setting, and geographic location would help identify and address which providers could improve screening rates.

## Implications

The main implications of this study relate to screening for substance use among adolescents, potential changes to Medicaid policy, and research gaps, as we describe below.

**Screening for substance use.** Several factors may explain the low rate of substance use screening conversations reported here. One may be the gap between federal and professional society recommendations, given the US Preventive Services Task Force graded the evidence for universal substance use screening of adolescents as insufficient to recommend in 2020 (Patnode et al. 2020), in contrast to the American Academy of Pediatrics' recommendation (AAP 2016). Other barriers to screening uptake for adolescent health care providers include insufficient provider training, time, and reimbursements (Palmer, Karakus, and Mark 2019), which may be a particular concern in Medicaid. In

addition, issues around privacy and confidentiality could be particularly important barriers to adolescents.

The screening method and delivery are critical to screening effectiveness. The most widely used framework for expanding substance use screening and early intervention in various settings, which is increasingly covered in Medicaid, is the Screening, Brief Intervention, and Referral to Treatment (SBIRT) approach (Hinde et al. 2017). SBIRT includes a universal screen using a validated screening tool to identify substance use, including nonmedical use of prescription opioids (e.g., the Car, Relax, Alone, Forget, Family/Friends, Trouble [CRAFFT] questionnaire for use with youth ages 12 to 21),<sup>3</sup> positive reinforcement and motivational intervention in the brief intervention step, and referral to treatment if needed (Mitchell et al. 2013). Whereas observational data show that SBIRT is effective in reducing alcohol use among adolescents (Steele et al. 2020), more evidence is needed to demonstrate effectiveness in reducing other substance use (Steele et al. 2020) and in addressing problems with referral to treatment that impede treatment initiation (Stanhope et al. 2018). One promising study showed that treatment initiation was four times higher among adolescents who received SBIRT from a behavioral health clinician versus from a pediatrician, which may speak to the value of integrated care models that include behavioral health (Sterling et al. 2017).

In addition, though the intention of universal substance use screening is to offer early intervention to youth in need, stigma about substance use and limited availability and awareness of developmentally and culturally effective treatment and support options could lead to negative outcomes, particularly for marginalized youth. Indeed, researchers and clinicians have pointed to potential negative consequences of substance use screenings for people of color because of greater risk of criminal justice involvement (Perritt 2020). It will be important to track screening rates by race and ethnicity and to assess subsequent receipt of effective treatment and involvement with the criminal justice system. Lastly, unadjusted rates of screening are consistently lower for girls with unhealthy opioid use or OUD, a critical failure with broad implications for the lives of such girls, as women with OUD report extremely high rates of childhood maltreatment, including 41 percent of women with OUD who report childhood sexual abuse (Santo et al. 2021).

**Needed Medicaid services.** Medicaid policy is a potentially powerful support for Medicaid-enrolled youth with unhealthy opioid use and OUD. Such youth need access to an integrated system of care including developmentally appropriate substance use and mental health services to respond to complex needs. The EPSDT Medicaid benefit could be expanded to explicitly include outreach and engagement with youth before a diagnosis, confidential screening and assessment, early intervention services, unlimited case management for comprehensive care coordination (e.g., substance use, mental health, school,

criminal justice), and transportation to care.<sup>4</sup> However, reimbursement may not be sufficient to give providers the time to build trust with adolescent patients, do the screenings, and have meaningful follow-up conversations that increase the odds of following through with effective treatment or other important interventions. Improving access also means providing services in youth-friendly environments, including home and “field-based” health care settings like parks, libraries, and streets.<sup>5</sup> Medicaid could also explore expanding and testing benefits through waivers to cover evidence-based therapeutic services including mentoring, alternative recreational therapies, and art therapy, as well as improve access to recovery services including peer recovery coaching and recovery housing (GAO 2018). Finally, for Medicaid to operationalize the American Society of Addiction Medicine’s recommendations in 2020 for the prevention of infections related to injection practices and sexually transmitted infections (Crotty, Freedman, and Kampman 2020), it will need to begin reimbursing harm-reduction-related services for adolescents.

**Research gaps.** Adolescent substance use has received little attention and funding, particularly at the federal level, and the Biden administration could spearhead the concerted, systematic efforts needed to build the evidence base. Evidence is needed to improve substance use prevention and interventions for adolescents that include leveraging digital technologies and social media, particularly to reach girls (Office of the Surgeon General 2016), who have higher rates of unhealthy opioid use and OUD and lower rates of exposure to prevention and intervention programming than boys. Research is also necessary to better understand the factors influencing provider decisionmaking about whether to screen adolescents for substance use and to improve rates of culturally effective intervention. In addition, although the efficacy of medications for OUD is established for youth, more research is needed, and best practices need to be developed for linking screening and assessment with personalized interventions including initiation and maintenance of medications for OUD, and appropriate referral to specialty treatment (Office of the Surgeon General 2016).

## Conclusion

Our study offers insight into the gap between the need for and the receipt of substance-use-related services among Medicaid-enrolled youth, particularly those with unhealthy opioid use. Our results demonstrate that these youth interact with health professionals at high rates but receive very little substance use care, and this is especially true for girls with unhealthy opioid use. Changes in Medicaid policy are needed to increase access to comprehensive, effective care addressing a variety of health care needs, including substance use and co-occurring mental health conditions. Supporting these youth

in need with comprehensive care will improve their health and economic prospects and have positive effects on their families and communities.

# Notes

- <sup>1</sup> “American Community Survey Tables for Health Insurance Coverage,” US Census Bureau, last revised October 8, 2021, <https://www.census.gov/data/tables/time-series/demo/health-insurance/acs-hi.html>.
- <sup>2</sup> Other substances include cocaine; hallucinogens; inhalants; methamphetamine; ecstasy; lysergic acid diethylamide, or LSD; phenylcyclohexyl piperidine, or PCP; sedatives; stimulants; and tranquilizers.
- <sup>3</sup> For more about the CRAFFT tool, see <https://craftt.org/>.
- <sup>4</sup> Los Angeles County Youth Services Policy Group (YSPG), letter to Director Lightbourne, August 20, 2020.
- <sup>5</sup> Los Angeles County YSPG, letter to Director Lightbourne.

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