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# Adolescent Residential Addiction Treatment In The US: Uneven Access, Waitlists, And High Costs

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**ABSTRACT** Drug overdose deaths among adolescents are increasing in the United States. Residential treatment facilities are one treatment option for adolescents with substance use disorders, yet little is known about their accessibility or cost. Using the Substance Abuse and Mental Health Services Administration’s treatment locator and search engine advertising data, we identified 160 residential addiction treatment facilities that treated adolescents with opioid use disorder as of December 2022. We called facilities while role-playing as the aunt or uncle of a sixteen-year-old child with a recent nonfatal overdose, to inquire about policies and costs. Eighty-seven facilities (54.4 percent) had a bed immediately available. Among sites with a waitlist, the mean wait time for a bed was 28.4 days. Of facilities providing cost information, the mean cost of treatment per day was \$878. Daily costs among for-profit facilities were triple those of nonprofit facilities. Half of facilities required up-front payment by self-pay patients. The mean up-front cost was \$28,731. We were unable to identify any facilities for adolescents in ten states or Washington, D.C. Access to adolescent residential addiction treatment centers in the United States is limited and costly.

**D**rug overdose deaths among adolescents are increasing in the United States, driven by illicitly manufactured fentanyl.<sup>1,2</sup> Residential treatment facilities are one treatment option for adolescents with substance use disorders, including opioid use disorder (OUD), and they typically provide care for adolescents with more severe use disorders who are unable to access or are unresponsive to outpatient treatment, have complex medical or psychiatric comorbidities, or have a challenging home environment.<sup>3</sup> The median length-of-stay at such facilities is typically around two months.<sup>4</sup> Identifying a residential treatment program can be difficult for families,<sup>5</sup> who are often tasked with finding and evaluating options in the midst of a crisis.

Previous research evaluating adolescent resi-

dential treatment settings found that facilities infrequently provide evidence-based care to adolescent patients, including buprenorphine, the only medication approved by the Food and Drug Administration for adolescents with OUD.<sup>6,7</sup> Research on adult treatment facilities for OUD also found that facilities often require costly up-front payments and that for-profit facilities charge twice as much as nonprofits but often have greater bed availability. In addition, adult facilities frequently use coercive recruitment techniques to encourage enrollment and offer admission over the phone without additional screening.<sup>8</sup> However, little is known about the accessibility, cost, or recruitment practices of residential treatment facilities that offer treatment to adolescents with OUD.<sup>9,10</sup> The goal of this study was to characterize treatment access in and costs of US residential treatment facilities that treat

patients with OUD who are younger than age eighteen.

## Study Data And Methods

**STUDY DESIGN AND SETTING** We conducted a “secret shopper” study, adapted from a prior survey of adult residential OUD treatment facilities,<sup>8,11</sup> to capture the experiences of families seeking treatment for an adolescent with OUD. Secret shopper methods approximate the real-world experiences of people seeking treatment and can help measure inequity in health care access.<sup>12</sup> We selected this method because we anticipated that responses to questions from academic researchers or physicians about treatment practices, costs, and bed availability would be different from the responses received by families calling to ask about treatment.

From October 24 through December 20, 2022, four authors (Caroline King, Natasha Smith, Dana Button, and Patrick C. M. Brown) called adolescent residential treatment facilities in random order while role-playing as the aunt or uncle of a sixteen-year-old child with a recent nonfatal fentanyl overdose to inquire about admission, treatment practices, and costs, as documented in a previously published study.<sup>7</sup> We developed a structured call script and data collection tool adapted from a survey of adult facilities<sup>11</sup> to address questions specific to adolescent treatment (see the call script in supplemental material 1 in the online appendix).<sup>13</sup> All four callers were White; two were female and two were male. Previous research has shown that White patients seeking mental health care appointments are offered care at higher rates compared with Black patients. We anticipated that any gaps in care elucidated through this project would underestimate real-world gaps experienced by callers who are Black, Latinx, Native American, and members of other racial and ethnic minority groups.<sup>14</sup> Callers first practiced the script with each other and then called adult, out-of-sample sites to trial the script. Weekly meetings were held among the four callers to rereview the script for consistency and troubleshoot problems on calls (for example, adjusting methods for female-only sites, as described below).

We called posing as the aunt or uncle instead of as a parent in case we were asked specific information about a child that it would be unusual for a parent not to know (for example, child’s height and weight, name of high school, and so on). Because there were more sites that accepted male versus female children, we called all sites first with our case child identified as male; if sites only accepted females, we repeated calls with the case child as female with a different caller. At the end

of each call, we emphasized that we were not able to make a decision on the phone about pursuing treatment and to not hold a bed or make an appointment for the case child.

The child in our case was uninsured but likely eligible for Medicaid. Using this framing, we asked facilities whether they accepted uninsured adolescents and, if so, how families typically covered the costs of treatment (for example, cash- or self-pay). We also asked whether facilities accepted Medicaid. We asked about uninsured, cash-pay, and Medicaid-covered adolescents to attempt to capture care availability for adolescents who could be excluded from care because of a lack of funds (versus adolescents on commercial insurance).

In addition, we asked sites whether they offered buprenorphine by describing the case child’s emergency department visit (that is, “In the emergency department, one of the doctors mentioned a medication—Suboxone? Is this something you offer there?”). We specifically asked about Suboxone because it was deemed more believable that a family member might ask for the trade name versus the generic name (in the same way that a patient may ask for Tylenol instead of acetaminophen). If sites were unsure about Suboxone, we planned to follow up with, “I think it is also called buprenorphine.”

We identified facilities using the Substance Abuse and Mental Health Services Administration’s (SAMHSA) treatment locator (now FindTreatment.gov)<sup>15</sup> and SpyFu, a website that provides access to Google advertising data.<sup>16</sup> We searched for sites within the entire United States, including Washington, D.C., but excluded Puerto Rico and Guam. The SAMHSA treatment locator is a commonly cited way to identify treatment options for substance use disorders, but previous research has found that the database may provide inaccurate information by overstating services that are available,<sup>17,18</sup> in part because the database requires programs to self-report information. The Office of Inspector General within the Department of Health and Human Services is currently auditing the SAMHSA treatment locator to assess accuracy.<sup>19</sup> SpyFu is a search analytics company<sup>16</sup> that compiles data on search engine advertisements, including comprehensive lists of keywords and ad variations that website domains have purchased on Google Ads. This allowed for the identification of facilities advertising adolescent addiction treatment services through their purchase of relevant Google Ads keywords (see supplemental material 2 for further methodological details and keywords).<sup>13</sup>

**STUDY VARIABLES** Callers elicited information on bed availability (wait time and approval proc-

ess), accepted payment methods (self-pay or Medicaid), and cost (cost per day, accepted self-pay payment forms, and up-front costs). Based on information in the SAMHSA treatment locator, we determined whether facilities were for-profit, nonprofit (including government-operated), and accredited by either the Joint Commission or the Commission on Accreditation of Rehabilitation Facilities, as families may believe that accredited facilities provide better care. For facilities identified from Google Ads, we reviewed websites to ascertain accreditation and for-profit status.

**ANALYSIS** We used descriptive statistics to report treatment admission availability and costs. Data were analyzed using Stata/IC, version 16.1.

This project was deemed non-human subject research by the Oregon Health & Science University Institutional Review Board (No. 13129). Study data were stored in REDCap electronic data capture tools hosted at Oregon Health & Science University.<sup>20,21</sup>

**LIMITATIONS** This study had several limitations. First, we used a fixed script for simulated calls that focused on a sixteen-year-old uninsured patient who would likely qualify for Medicaid. Some cash-pay quotes provided may have been lower than for higher-income households because we used this scenario. Second, the treatment locator may have excluded some facilities that we did not recover from advertisements. However, we expect that we very nearly captured the full target population and that our results likely represent those facilities that families searching for treatment would be able to identify and approach. Third, we did not explicitly highlight race, ethnicity, gender identity, or sexual orientation in our survey; barriers to care for marginalized patients are likely greater than those described in this article and should be evaluated in future research.<sup>22,23</sup> Fourth, in our analysis, we analyzed bed availability and practices at the state level; this may have underestimated disparities in access in states with significant urban versus rural gaps (that is, New York and Oregon) that have access to treatment predominantly in urban areas, as well as within states with variation along local per capita incomes. Fifth, our study likely underestimated burdens experienced by families seeking care, as there may be additional barriers to care related to insurance, including Medicaid application, prior authorizations, or other burdens that we did not study. Finally, outpatient adolescent OUD treatment services, which have the potential to greatly expand OUD treatment access, were outside the scope of the current study. Primary care and outpatient specialty addiction treatment programs are an essential component

## For families paying out of pocket, the mean reported daily cost of treatment at for-profits was triple that at nonprofits.

of the adolescent treatment continuum and merit further research.

### Study Results

We enumerated 354 residential addiction treatment facilities that indicated that they provided services to adolescents (308 identified only through the SAMHSA treatment locator, twelve through Google Ads, and thirty-four through both). Of those, we were unable to reach twenty-seven facilities (7.6 percent): Twenty had nonworking or incorrect phone numbers provided to SAMHSA, and seven did not answer or return calls after five attempts. Of the 327 facilities reached, 160 facilities confirmed that they currently provided residential addiction treatment to patients younger than age eighteen, as we documented previously; these were the facilities we studied.<sup>7</sup> Of the 308 facilities originally identified online using the SAMHSA treatment locator, which indicated that they provided residential treatment for adolescents, 151 facilities (49.0 percent) reported during our telephone calls that they actually provided adolescent residential addiction treatment.

Of the 160 facilities that confirmed their provision of residential addiction treatment to adolescents, most offered treatment to adolescents with OUD between the ages of thirteen (mean minimum age) and eighteen (mean maximum age): 106 facilities (66.3 percent) treated only patients ages eighteen and younger, 44 facilities (27.5 percent) also treated adult patients but housed them separately, and 10 facilities (6.3 percent) treated adult patients and housed them with adolescents. Overall, sixty-six facilities (41.3 percent) were for-profit, and ninety-four facilities (58.8 percent) were nonprofit. Fifty-three were accredited by the Commission on Accreditation of Rehabilitation Facilities (33.1 percent), and sixty-six were accredited by the Joint Commission (41.3 percent). Character-

# Both residential and outpatient treatment settings must address the complex challenges that adolescents bring to substance use disorder treatment.

istics of centers stratified by for-profit and non-profit status are in supplemental material 3.<sup>13</sup>

**BED AVAILABILITY** Overall, eighty-seven facilities (54.4 percent) had a bed available immediately, sixty-three facilities (39.4 percent) had no beds available or offered a waitlist, and nine (5.6 percent) were unsure of bed availability; one did not respond. Fifty-one of sixty-six for-profit facilities (77.3 percent) had a bed available that day versus thirty-six of ninety-four non-profit facilities (38.7 percent).

Sixty-five facilities estimated the number of days until a bed opened, with a mean wait time of 28.4 days (median: 21 days; standard deviation: 29.2; interquartile range: 14, 30). Eleven (16.9 percent) of those sixty-five facilities anticipated having an open bed within the week. Mean wait time for a bed in a for-profit facility was 18.9 days (SD: 8.8), with a median of 14 days (IQR: 14, 28), versus a mean 31 days (SD: 32.2) with a median of 21 days (IQR: 14, 35) wait time for a bed in a non-profit facility. The longest wait time at a for-profit facility was 35 days, compared with 180 days at a non-profit facility. Overall, 57.1 percent of all facilities that accepted Medicaid reported a waitlist, versus 18.8 percent of facilities that did not accept Medicaid.

Most facilities ( $n = 132$ , 82.5 percent) required additional screening (for example, financial, substance use, mental health, or custody information) before offering admission. Twenty-five facilities (15.6 percent) required only an intake interview, and two facilities (1.3 percent) offered admission over the telephone.

## TREATMENT PAYMENT

► **ACCEPTANCE OF MEDICAID:** Ninety-one adolescent facilities (56.9 percent) accepted Medicaid, including 19.7 percent of for-profits and 83.0 percent of non-profits. Of the sixty-nine sites

that did not accept Medicaid, eleven (15.9 percent) stated that most adolescents at their sites were privately insured. We were unable to identify any residential treatment facilities for adolescents in ten states or Washington, D.C. (exhibit 1). We were unable to identify any residential treatment facilities for adolescents that accepted Medicaid in an additional thirteen states. Eighteen states had a facility that accepted Medicaid and had a bed open the same day. Seven states had a facility that accepted Medicaid, had a bed open the same day, and offered buprenorphine.

► **CASH PAYMENT:** Of the 160 facilities, 126 (78.8 percent) accepted cash payment, including all sixty-six for-profit facilities. Twenty facilities (12.5 percent) were reported as free or likely free in the setting of our simulated call (an adolescent likely eligible for Medicaid who did not yet have insurance), all of which were nonprofits. Seven facilities (4.4 percent) were unsure whether they accepted cash payment.

Of the 126 facilities that accepted cash payment, 108 provided estimated costs over the telephone. The mean cost per day of treatment was \$878 (SD: 721), with a median cost of \$513 per day (IQR: 333, 1,875). Among for-profit facilities, the mean cost per day of treatment was \$1,211 (SD: 732), with a median cost of \$1,200 per day (IQR: 468, 1,950), versus a mean cost per day of treatment for non-profit facilities of \$395 (SD: 323) and a median cost of \$350 per day (IQR: 200, 500).

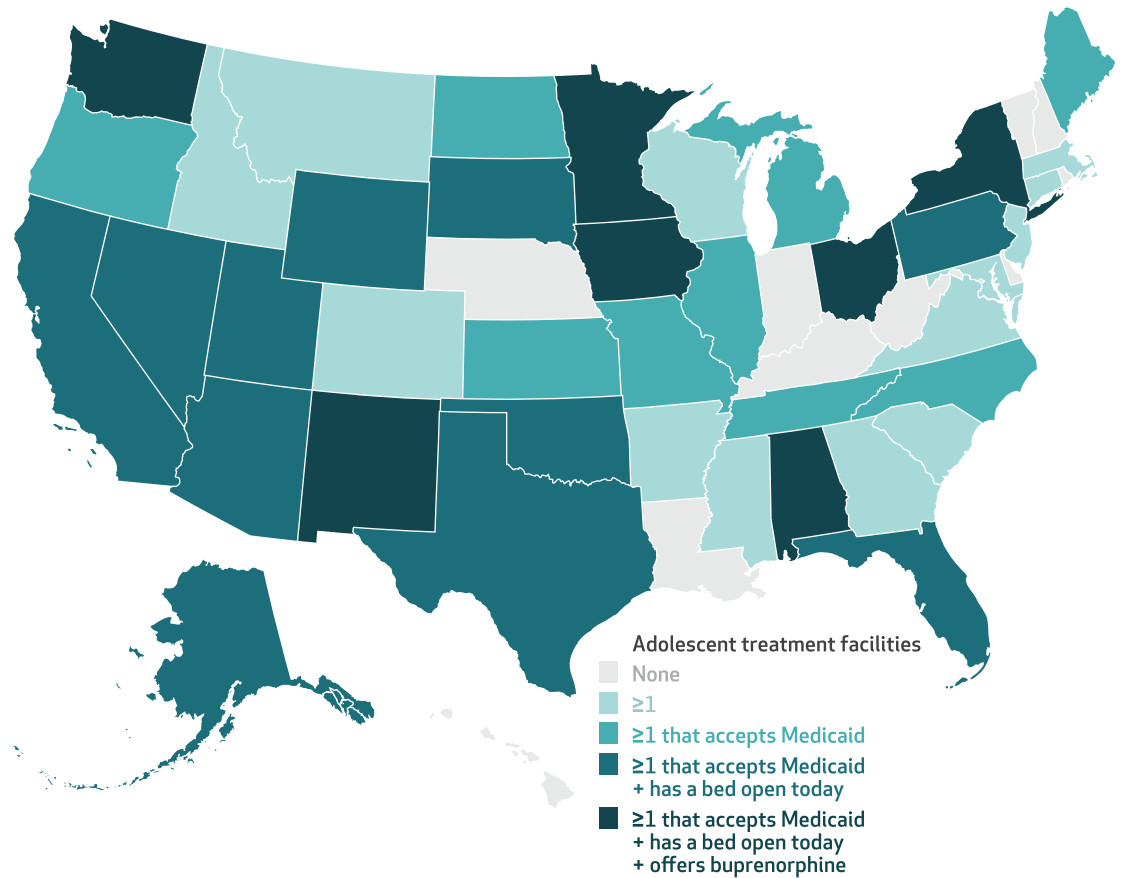
► **UP-FRONT COSTS** Nearly half of the 160 facilities ( $n = 76$ , 47.5 percent) required some up-front payment if using self-pay. Facilities reported either a numeric value required on the first day, which could encompass more than one month of treatment, or provided the percentage of the first month's costs required up front. The mean reported up-front cost was \$28,731 (SD: 24,549), with a median cost of \$18,225 (IQR: 6,000, 58,500). Among for-profit facilities that required an up-front payment, the mean up-front cost was \$34,729 (SD: 24,681) with a median of \$37,000 (IQR: 10,500, 58,500) versus a mean up-front cost of \$9,897 (SD: 9,978) and median cost of \$6,000 (IQR: 4,500, 10,000) for non-profit facilities that required an up-front payment (see supplemental material 4).<sup>13</sup>

## Discussion

Our study identified 160 adolescent residential addiction treatment facilities in the United States, with wide geographic variability in access to timely, evidence-based treatment. Just over half of facilities accepted Medicaid, with a stark contrast by facility profit orientation: One in five for-profits accepted Medicaid, compared with

EXHIBIT 1

Geographic access to and characteristics of residential treatment facilities serving adolescents younger than age 18 with opioid use disorder, United States, 2022



**SOURCE** Authors' analysis of data from a "secret shopper" phone survey of 160 residential addiction treatment facilities conducted between October 24 and December 20, 2022. **NOTES** This map depicts variation in access to residential addiction treatment for adolescents with opioid use disorder, by payer, bed availability, and treatment availability. The legend categories are hierarchical; they are truncated for brevity and described more fully here. Each state falls into exactly one of the following categories: no adolescent treatment facility that accepts Medicaid but none of which has a bed available; at least one adolescent treatment facility that accepts Medicaid and that has a bed available, but none of which offers buprenorphine; and at least one adolescent treatment facility that accepts Medicaid, has a bed available, and offers buprenorphine.

four in five nonprofits. For families paying out of pocket, the mean reported daily cost of treatment at for-profits was triple that at nonprofits (\$1,211 versus \$395). Close to half of all facilities required some up-front payment if using self-pay, including nearly all for-profit facilities; for-profit facilities had a mean up-front cost of \$34,729. In twenty-three states, we did not identify an adolescent residential treatment center that accepted Medicaid. Only seven states had a facility that accepted Medicaid, had a bed open the same day, and offered buprenorphine.

Despite previous research demonstrating that few adolescent facilities provide evidence-based care for OUD,<sup>7</sup> the mean monthly reported cost of treatment in the current study was \$26,353, which is twice the annual federal poverty level

in 2022 for a single-person household in the US (\$13,590).<sup>24</sup> This is particularly striking, as OUD disproportionately affects people with low socioeconomic status.<sup>25</sup> Up-front costs were similarly expensive and required by nearly all for-profit facilities (mean: \$34,729) versus only seventeen nonprofit facilities (mean: \$9,897). In addition, a higher percentage of for-profit facilities had beds available compared with nonprofit facilities. These disparities are similar to those identified among for-profit versus nonprofit adult residential treatment sites, although the cost gap is greater among adolescent sites (in adult facilities, for-profits' up-front costs were \$17,434, versus \$5,712 for nonprofits).<sup>8</sup> Financing via Medicaid reimbursement and disparities in marketing resources may reinforce these dif-

# Timely access to high-quality residential and outpatient treatment services is critical to curb rising trends in adolescent overdose.

ferences between non- and for-profit sites.<sup>26</sup> For-profit sites may focus more intentionally on affluent families and may impose significant economic burdens on all families, despite low rates of access to evidence-based treatment among all sites.<sup>7</sup> These results, taken together, indicate that parents searching for treatment options during a crisis may be compelled to pursue the first available treatment, even at exorbitant costs and even though many facilities do not offer evidence-based treatment.<sup>7</sup>

Physicians treating adolescents with OUD advocate for access to evidence-based treatment and overdose prevention in the least-restrictive setting that is appropriate for the patient.<sup>27</sup> Residential treatment is one part of a broader treatment continuum, including outpatient addiction treatment programs and primary care, that is reckoning with the need for increased access to evidence-based care in the face of rising fentanyl-related overdoses among adolescents. Although outside the scope of the current study, primary care providers who treat adolescents remain a key component for expanding treatment access, especially in rural areas, by maximizing screening for OUD during sports physicals and well-child visits. Technical support interventions to improve primary providers' comfort prescribing buprenorphine for adolescents with OUD could increase access for those not requiring residential treatment, partnering with adolescent treatment facilities to prescribe buprenorphine, and improving long-term recovery by offering ongoing buprenorphine treatment after completion of residential treatment.

Further compounding this challenge, however, is the current mental health crisis among adolescents in the US; when an adolescent has both an acute psychiatric crisis and substance use disorder, it may increase the need for residential treatment.<sup>3,28</sup> Previous research has shown that adolescent treatment interventions that integrate treatment of prevalent mental

health conditions such as anxiety, depression, and attention deficit hyperactivity disorder are clearly needed.<sup>29</sup> Both residential and outpatient treatment settings must address the complex challenges that adolescents bring to substance use disorder treatment, including further support for navigating family challenges and legal issues and facilitating housing and school environments that support long-term recovery.<sup>30</sup> Successfully accomplishing this will mean expanding not only the services and care provided to adolescents at treatment facilities but also likely the number of treatment beds. In 2021, the National Substance Use and Mental Health Services Survey estimated that substance use facilities in the US had a bed use rate of 96 percent (age nonspecific).<sup>31</sup> Same-day bed availability in our study was limited, particularly among non-profit facilities, and was similar to that in adult facilities, which had same-day bed availability in one of every five nonprofit facilities.<sup>8</sup>

Further research is needed to identify which adolescents with OUD may benefit most from residential treatment and to compare adolescent residential treatment outcomes with those for adolescent outpatient treatment approaches, which, for adults, achieve outcomes comparable to those of residential treatment at a lower cost.<sup>32</sup> Economic analyses of adolescent treatment interventions, including treatment setting, should take into account contextual factors that affect adolescent treatment, such as level of Medicaid reimbursement to support staffing, legal system effects, school effects, and housing systems.<sup>33</sup> System-level reform that increases Medicaid reimbursement for adolescent treatment and supports providers and facilities with education and technical assistance may be required to improve access to evidence-based treatment in both outpatient and residential treatment settings; increase treatment options for adolescent patients using Medicaid or cash payment; and decrease geographic disparities in access to treatment, as others have called for previously.<sup>34</sup>

Facilities with a waitlist were predominantly nonprofits and had, on average, approximately a month wait time until a bed opened or the adolescent could be admitted. This was longer than among adult addiction treatment facilities with a waitlist, which had a mean wait time of six days.<sup>8</sup> In addition, nearly 60 percent of facilities that accepted Medicaid had a waitlist. The time between seeking and entering treatment is fraught, with increased risk for overdose among adults,<sup>35</sup> and there is some evidence that this is also true for adolescents.<sup>36</sup> Timely access to high-quality residential and outpatient treatment services is critical to curb rising trends in adolescent overdose. Staffing challenges are a key driver of bed

availability at residential treatment facilities, as facilities frequently have insufficient qualified staff to adequately open all available beds in a facility. For example, 54.1 percent of treatment facilities in the state of Oregon identify lack of staffing as a barrier to maximizing bed access.<sup>37</sup> Medicaid and other funders could develop financial reimbursement incentives that support hiring, retention, and adequate pay for qualified staff. The lack of affordable, evidence-based adolescent residential treatment capacity for large geographic areas of the US emphasizes the need to expand timely access to addiction treatment for adolescents through both residential and outpatient programs.

## Conclusion

Access to adolescent residential addiction treatment facilities is costly and unevenly distributed across the United States. Findings suggest that systems-level interventions are needed to ensure adequate, equitable access to affordable treatment, including for Medicaid patients and through both residential and outpatient treatment. Future research is also needed to identify how best to expand access to affordable, evidence-based treatment for adolescents with OUD. ■

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