Notice of correction 5/14/2021: The funding/support statement now reflects that Drs Rao and Wilens are supported by a grant (4UH3DA050252) from the Helping to End Addiction Long-term Initiative of the National Institutes of Health/National Institute on Drug Abuse.

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Pharmacotherapy for Attention-Deficit/Hyperactivity Disorder and Retention in Outpatient Substance Use Disorder Treatment:

A Retrospective Cohort Study

Kristopher A. Kast, MD[a,*]; Vinod Rao, MD, PhD[b]; and Timothy E. Wilens, MD[b]

ABSTRACT

Objective: To assess the relationship between short- and longer-term retention in outpatient substance use disorder (SUD) treatment and pharmacotherapy for comorbid attention-deficit/hyperactivity disorder (ADHD).

Methods: In this retrospective cohort study conducted in a single addiction psychiatry clinic, electronic health record data from July 14, 2014, through January 15, 2020, were queried for clinical ADHD diagnosis (*DSM-5* criteria), ADHD pharmacotherapy, treatment duration, demographic variables, comorbid psychiatric and SUD diagnoses, and buprenorphine therapy. Individuals with ADHD (n = 203) were grouped by ADHD pharmacotherapy status (171 receiving medication compared to 32 receiving none). Kaplan-Meier and Cox proportional hazards regression analyses were performed and assessed for significance.

Results: ADHD was clinically diagnosed in 9.4% of outpatients and was associated with younger age, comorbid cocaine use, and private insurance ($P < .001$). Individuals receiving no ADHD pharmacotherapy were younger than those receiving medication ($P = .003$). Compared to no ADHD medication, ADHD pharmacotherapy was associated with greater long-term retention, with apparent group half-lives of 9 months and 36 months, respectively ($P < .001$). Individuals receiving no ADHD medication had a 4.9-fold increased likelihood of attrition within 90 days ($P = .041$). Regression analysis showed only ADHD pharmacotherapy to be significantly associated with treatment retention (hazard ratio = 0.59; 95% CI, 0.40–0.86; $P = .008$).

Conclusions: ADHD pharmacotherapy is robustly associated with improved short- and longer-term retention in outpatient SUD treatment. The retrospective, nonrandomized naturalistic study design limits causal inference. Further studies addressing unmeasured covariates and associated risks of treatment in adults with ADHD and SUD are necessary.

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[a]Department of Psychiatry and Behavioral Sciences, Vanderbilt University Medical Center, Nashville, Tennessee

[b]Department of Psychiatry, Massachusetts General Hospital, Boston, Massachusetts

**Corresponding author:* Kristopher A. Kast, MD, 1601 23rd Ave South, Nashville TN, 37212 (kristopher.a.kast@vumc.org).

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Clinical Points

- Evidence from more recent randomized controlled trials has demonstrated short-term efficacy of attention-deficit/hyperactivity disorder (ADHD) pharmacotherapy for outcomes of ADHD itself as well as substance use disorder (SUD) outcomes in individuals with this comorbidity, but the effect in real-world clinical settings on short- and longer-term outcomes has not been defined, and clinicians are often wary of prescribing stimulants to individuals with SUD diagnoses.
- Deferring ADHD pharmacotherapy may risk early treatment dropout with its grave sequelae, while a stimulant trial (provided within a risk-mitigating structure of frequent visits, short-term supply dispensing, toxicology screening, and measurement of treatment response) may increase retention in the short and longer term, allowing for engagement in additional treatment modalities with lower symptom burden.

Treatment retention is a critical outcome for individuals with substance use disorders (SUDs).[1] Overall retention rates in SUD treatment are similar to those in general psychiatric and medical treatment.[2] However, the consequences of early dropout are particularly problematic for the SUD population, risking relapse, medical and socioeconomic sequelae, overdose, and death. Some interventions for SUD have shown promise in improving retention, including contingency management, community reinforcement, motivational interviewing approaches,[3–6] and opioid agonist therapies.[7–10]

Non-SUD psychopathology further complicates SUD treatment retention.[11–14] Among the most common comorbidities, attention-deficit/hyperactivity disorder (ADHD) frequently co-occurs with SUD. ADHD is a highly heritable neurodevelopmental disorder characterized by inattention, distractibility, impulsivity, and hyperactivity. ADHD adversely affects individuals' functional outcomes across multiple dimensions, including academic achievement, work performance, relationship stability, legal system involvement, health system utilization, and accidental death.[15] ADHD is common and chronic, occurring in 4%–5% of adults in the general population.[15–17] Among treatment-seeking individuals with SUD, the prevalence of ADHD is 19%–27%,[18] highlighting the importance of screening in SUD treatment settings.

In co-occurring SUD and ADHD, individuals experience earlier-onset substance use, longer duration of active SUD, more frequent and heavier use patterns, more difficulty achieving remission, and lower retention when compared to those with SUD but without ADHD.[19–21] Effective ADHD pharmacotherapy offers an opportunity to reduce ADHD symptom burden and potentially increase retention in addiction treatment.[20,22,23]

Pharmacotherapy is a highly effective treatment modality for ADHD, with large pooled effect sizes in both pediatric[24] and adult populations.[25] Pharmacotherapy improves both ADHD symptoms and associated functional outcomes both short and longer term.[26] Among individuals with comorbid SUD, ADHD pharmacotherapy has demonstrated variable efficacy, though effect sizes are attenuated. In the most recent randomized clinical trials,[23,27,28] relatively higher dose stimulant treatment reduced ADHD symptoms and improved substance use outcomes. While helpful, the randomized trials of ADHD pharmacotherapy in SUD are typically limited to 12 weeks,[23] with only 1 trial[27] evaluating outcomes out to 24 weeks. Hence, longer-term outcomes in this group, particularly in naturalistic treatment settings, are desperately needed.

To this end, we studied the relationship between pharmacotherapy for ADHD and retention in outpatient SUD treatment. On the basis of the literature, we hypothesized that patients with SUD and comorbid ADHD who received ADHD pharmacotherapy would have improved retention compared to those with ADHD not receiving medication for this comorbidity.

METHODS

Study Setting and Design

This retrospective observational study examined electronic health record (EHR) data from individuals admitted to a single outpatient addiction psychiatry clinic at an urban academic medical center in New England. Data were obtained from a 5.5-year period: July 14, 2014, to January 15, 2020. This period was chosen to reflect all available electronic patient data from the clinic prior to study initiation; the start date marks the clinic's transition to a new EHR system. The clinic offered low-barrier engagement through walk-in clinic hours and rapid initiation of bridging pharmacotherapy as early as the first visit. Individual, group, and couples/family psychotherapy in multiple evidence-based modalities, as well as recovery coaching, were offered. A thrice-weekly intensive outpatient program was also available. Case management services and care coordination with primary and specialty medical care were available to clinic providers.

This project was undertaken as a Quality Improvement Initiative and, as such, was not formally supervised by the Institutional Review Board per their policies.

Participants

Diagnosis of ADHD was made clinically, applying *DSM-5* criteria in the course of routine practice across all phases of care within the academic medical center. ADHD diagnoses made outside the addiction psychiatry clinic were reassessed by clinic staff.

All patients referred or presenting newly to the addiction psychiatry clinic underwent intake assessments performed by licensed, terminal-degree psychology or social work staff using a semistructured clinical interview with standardized brief screening for major categories of comorbid psychopathology. No standardized ADHD screening or symptom rating tool was required. Historical and new diagnoses were further reviewed and reassessed by unstructured clinical interview

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with subsequent clinical staff providing psychotherapeutic and pharmacologic treatment. All clinic providers have subspecialty training and/or discipline-specific certification in substance use and related disorders; all are licensed, terminal-degree providers within their respective fields.

Individuals who received an ADHD diagnosis were identified by billing *ICD-10* code F90*. Individuals receiving ADHD pharmacotherapy were compared to those who were prescribed no ADHD medications.

Data Source, Variables, and Measurement

EHR data were queried for clinical ADHD diagnosis, prescription of ADHD pharmacotherapy (including amphetamine, lisdexamfetamine, methylphenidate, guanfacine, atomoxetine, modafinil, and bupropion products), date of first ADHD pharmacotherapy prescription, and dates of admission and discharge from the clinic.

Data for demographic variables including age, sex-assigned-at-birth, race, and insurer (private, public, or uninsured) were obtained. Buprenorphine treatment (with date of first prescription), *DSM-5*–defined SUD diagnoses (alcohol, benzodiazepine, opioid, cannabis, cocaine, and other stimulant use disorders), and *DSM-5*–defined major psychiatric diagnoses (bipolar, depression, anxiety, and posttraumatic stress disorders) were analyzed as covariates.

The main outcome was duration of treatment, measured as time from admission to discharge or end of the study period. In this study, no distinction was made between treatment dropout and discharge; individuals not returning to treatment for >3 months with no future scheduled appointment were considered discharged from clinic. For individuals discharged, raw duration was reduced by 90 days to account for the artifactual 3-month period from last attended visit to the date of administrative discharge recorded by the EHR.

Statistical Methods

Descriptive statistics were computed for each group, including mean ages (with standard deviation), percent female, percent White, and percent privately insured. Groups were compared across these variables by 2-tailed *t* test for age and χ^2 test for goodness of fit for the remaining categorical variables.

Kaplan-Meier curves were generated for each group, graphing retention over 2 years from date of admission. Curves for each group were compared and assessed for significance by log rank testing, with 95% confidence intervals (CIs) generated and plotted. Apparent half-lives were estimated as the duration of treatment at which 50% of the participants had dropped out of treatment.

Cox proportional hazards regression analysis was performed for identified covariates. To satisfy the proportional hazards assumption, ADHD and buprenorphine pharmacotherapy were modeled as time-dependent covariates and the analysis was stratified by age and race. The time-dependent covariates account for unexposed time in treatment.

To further address potential bias due to nonrandomized pre-exposure retention, additional subgroup survival analyses were performed using data only from individuals receiving ADHD pharmacotherapy within 90 days of admission.

RESULTS

Participants

Overall, there were 2,163 individuals admitted to outpatient SUD treatment during the study period, of whom 203 received an ADHD diagnosis code, yielding a 9.4% prevalence of clinically diagnosed ADHD. No cases were excluded from further analyses: 171 individuals with ADHD received ADHD pharmacotherapy; 41 received their first prescription prior to admission, 44 within 90 days of admission, and 86 more than 90 days after admission. Among the ADHD pharmacotherapy group, 63% received nonstimulants and 82% received stimulants (not mutually exclusive). Overall, 67% of stimulants were extended-release or prodrug formulations, and in those receiving amphetamine formulations (n = 105), 97% were adherent by toxicology screen. Thirty-two patients with ADHD received no ADHD pharmacotherapy.

Descriptive Data

Individuals receiving a clinical ADHD diagnosis were significantly younger (mean ± SD age = 38 ± 11 vs 45 ± 14 years, $P < .001$), more likely to be privately insured (65% vs 44%, $P < .001$), and more likely to have cocaine use disorder (31% vs 12%, $P < .001$) than those without ADHD; these groups did not differ by sex-assigned-at-birth or race (Table 1).

Individuals with ADHD receiving pharmacotherapy were significantly older than those receiving no pharmacotherapy (mean ± SD age = 38 ± 11 vs 32 ± 9 years, $P = .003$); these groups did not differ by sex-assigned-at-birth, race, insurer, or cocaine use disorder (Table 2).

Treatment Retention

In the Kaplan-Meier retention analyses, the ADHD pharmacotherapy group had significantly greater retention than those receiving no ADHD medication ($P < .001$). The apparent half-life in treatment was 36 months for the ADHD pharmacotherapy group, with only 5% attrition at 90 days. For those not receiving ADHD pharmacotherapy, the apparent group half-life was 9 months, with 35% attrition at 90 days (Figure 1).

This significant difference persisted when limiting the ADHD pharmacotherapy group to only those receiving ADHD medication within 90 days of admission (n = 84; 11% attrition at 90 days, $P = .041$ by χ^2 test; apparent group half-life = 21 months, $P = .025$ by log rank test). Compared to this early pharmacotherapy group, individuals receiving no ADHD medication had an almost 5-fold increased risk of attrition within 90 days (OR = 4.92).

In subgroup analysis of those receiving stimulants within 90 days of admission, longer-term retention remained

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Table 1. Descriptive Statistics of Individuals Admitted to Clinic Over the 5.5-Year Study Period With and Without ADHD[a]

Variable	All Admitted Individuals (N = 2,163)	ADHD (n = 203)	No ADHD (n = 1,960)	*P* Value
Age, mean ± SD, y	44 ± 14	38 ± 11	45 ± 14	< .001*
Female	810 (37)	86 (42)	724 (37)	.64
White	1,871 (87)	182 (90)	1,689 (86)	.92
Private insurer	1,003 (46)	131 (65)	872 (44)	< .001*
Cocaine use disorder	300 (14)	62 (31)	238 (12)	< .001*

[a]Values are shown as n (%) unless otherwise noted. *P* values reflect *t* test or χ^2.
*Individuals with clinically diagnosed ADHD were significantly younger, more likely to have cocaine use disorder, and more likely to be privately insured than individuals without an ADHD diagnosis.
Abbreviation: ADHD = attention-deficit/hyperactivity disorder.

Table 2. Descriptive Statistics of Individuals With ADHD Who Received ADHD Pharmacotherapy or No ADHD-Targeted Medication[a]

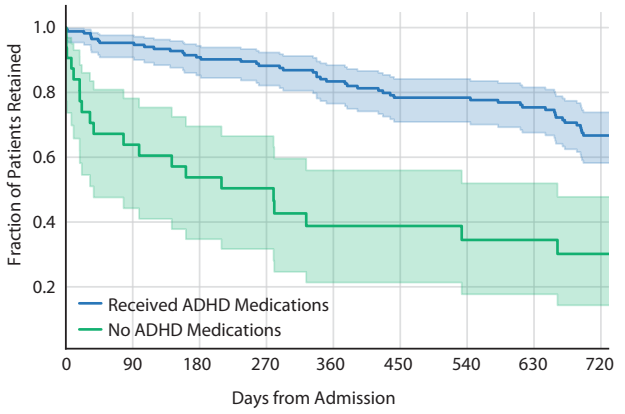
Variable	No ADHD Medication (n = 32)	ADHD Pharmacotherapy (n = 171)	*P* Value
Age, mean ± SD, y	32 ± 9	38 ± 11	.003*
Female	14 (44)	72 (42)	.999
White	26 (81)	156 (91)	.576
Private insurer	21 (66)	110 (64)	.999
Cocaine use disorder	10 (31)	52 (30)	.999

[a]Values are shown as n (%) unless otherwise noted. *P* values reflect *t* test or χ^2.
*Individuals receiving ADHD pharmacotherapy were significantly older than those receiving no ADHD-targeted medication.
Abbreviation: ADHD = attention-deficit/hyperactivity disorder.

significantly improved out to 21 months' follow-up, with an identical and near-significant improvement in 90-day attrition (n = 66; 11% attrition at 90 days, $P = .074$ by χ^2 test; apparent group half-life 19 months, $P = .043$). The group receiving only non-stimulant ADHD medication within 90 days did not differ from those receiving no medication, though small sample size limits interpretation (n = 11; 20% attrition at 90 days, $P = .917$ by χ^2 test; apparent group half-life = 6 months, $P = .947$).

Cox proportional hazards regression analysis showed ADHD pharmacotherapy to be a significant predictor of longer treatment duration in a model including all measured covariates (HR = 0.59; 95% CI, 0.40–0.86; $P = .008$). No other measured covariate was a significant predictor of retention in this model, including buprenorphine therapy (HR = 0.97; 95% CI, 0.59–1.60; $P = .902$; Supplementary Table 1).

Figure 1. Kaplan-Meier Retention Curves for ADHD Pharmacotherapy Versus No ADHD Medication[a]



[a]Vertical axis depicts proportion of patients retained in treatment. Horizontal axis depicts days in treatment after admission. Shaded area around each curve represents the 95% CI.
Abbreviation: ADHD = attention-deficit/hyperactivity disorder.

DISCUSSION

The main outcome of this retrospective cohort study supports our hypothesis, showing a robust association between ADHD pharmacotherapy and improved retention in both short- and longer-term SUD treatment. This finding primarily reflects the use of stimulants for ADHD, with a small sample size limiting assessment of nonstimulants. While these data are limited by the retrospective, nonrandomized naturalistic study design, our findings support previous calls for early diagnosis and pharmacologic treatment of ADHD in adults with SUD.[22,23,29,30]

To our knowledge, this study is the first assessing longer-term retention in outpatient SUD treatment among individuals receiving pharmacotherapy for ADHD. Remarkably, our observed retention half-life of 21–36 months in the treated group is comparable to treatment retention for adults with ADHD in general psychiatric settings. In those studies,[31–33] 50% of adults with ADHD treated with stimulants remain on stimulant therapy with improved functional outcomes at 2- to 6-year follow-up. In contrast, a recent Cochrane review[34] of prescribed amphetamines for adult ADHD found no improvement in retention compared to placebo (risk ratio = 1.06; 95% CI, 0.99–1.13); however, that meta-analysis reported the supporting evidence as low quality, found high overall retention rates (75%–85%), and included only randomized controlled trials with a mean follow-up of 5 weeks.

Our observed rates of attrition in the group receiving no ADHD medication are comparable to those in a long-term follow-up study[20] of 23 individuals with ADHD and SUD who were also not treated with ADHD pharmacotherapy. This study from an abstinence-based therapeutic community reported a 35% attrition rate at 60 days with a median 9-month duration of treatment. Longer-term outcomes of individuals retained in SUD treatment for less than 90 days are equivalent to outcomes of those who drop out immediately following intake or medically supervised withdrawal; in contrast, longer treatment duration is associated with improvement across multiple outcomes, including substance use, employment, and legal system involvement.[7,35–37]

Of the randomized controlled trials testing ADHD pharmacotherapy in individuals with SUD, most report only short-term retention (~90 days) ranging from

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45% to 85%, with few of these studies noting significant improvements compared to placebo.[23,27] This variability in retention most likely reflects differences in concurrent treatment (eg, methadone therapy enhancing retention),[38] ADHD medication studied, specific SUD studied (including nicotine, alcohol, opioid, cocaine, and amphetamine use disorders), and setting (eg, lower retention in the formerly incarcerated group).[27] While findings are limited by our sample size, we found lower retention with nonstimulants compared to stimulants, consistent with previous work comparing atomoxetine and stimulants in adults with SUD.[39] It is notable that the naturalistic design of our study addresses real-world treatment retention within a clinic utilizing flexible, individualized treatment plans, differing from retention observed in less-flexible, protocol-driven interventions in randomized controlled trials.[21]

We identified one study examining the impact of pharmacotherapy for ADHD on longer-term retention: a randomized controlled trial[27] of high-dose extended-release methylphenidate evaluating retention at 6 months. Konstenius and colleagues[27] reported a reduced risk of dropout after prison release among those receiving medication comparable to our results (HR = 0.38; 95% CI, 0.17–0.65 in their study; HR = 0.59; 95% CI, 0.40–0.86 in our study), although absolute retention rates were lower in that formerly incarcerated population.[27]

Prior studies[38,40] have reported retention similar to that for non-ADHD peers among individuals with ADHD on opioid agonist treatment for comorbid opioid use disorder, with very few individuals on buprenorphine or methadone treatment receiving ADHD pharmacotherapy (3.5%–4.6% in a large Norwegian study[29]). Although limited by a small sample size, our regression analysis did not find buprenorphine therapy to be a significant predictor of retention in this group. In contrast, prior analyses of data from this clinic that included individuals without ADHD have shown buprenorphine to be a significant predictor of retention for the overall clinic population (V.R., unpublished data, 2018). Interestingly, our study reports an effect of ADHD pharmacotherapy on longer-term SUD treatment retention that is comparable to that of buprenorphine and methadone in opioid use disorder, for which treatment half-lives are 6–12 months.[7–10]

We found that 1 in 10 adults in our sample was given a clinical diagnosis of ADHD. Given the internationally replicated prevalence of 19%–27% in SUD treatment settings,[18] our observed rate of ADHD is less than half of what is expected when using standardized diagnostic instruments. Since more flagrant symptoms may be more easily recognized, the likelihood of clinical ADHD diagnosis in our sample may positively correlate with ADHD symptom severity, leading to a sample enriched for greater ADHD symptom burden. If that is the case, our finding of a robust response to ADHD pharmacotherapy would align with prior evidence for more severe ADHD symptoms' predicting response to stimulant treatment.[41] Clinicians caring for individuals with comorbid ADHD and addiction face significant diagnostic and therapeutic challenges. ADHD spectrum symptoms are easily misattributed to SUD, and even when ADHD is diagnosed, delaying initiation of pharmacotherapy may be well-intentioned, especially early on in a treatment episode.[30] Particularly when considering stimulant therapy, the risk of prescribing a controlled substance with potential for nonprescribed use to an individual with addiction is often felt to outweigh the potential benefit of ADHD symptom remission.

In non-SUD populations, pharmacotherapy for ADHD is highly effective, improving both neurobehavioral symptoms and functional outcomes.[24,25] Stimulants consistently demonstrate greater clinical efficacy than nonstimulants,[24,25] but stimulant prescribing is complicated by clinicians' valid concern for nonprescribed use and diversion.[42–44] While early stimulant therapy for ADHD is known to reduce the risk of progression to SUD,[45,46] the relative risks and benefits posed by stimulant therapy for individuals who have already developed SUD are less well defined.

Among individuals with comorbid SUD, high-dose stimulant treatment has been shown to reduce ADHD symptom burden and improve substance use outcomes in randomized controlled trials.[23] Coupling the outcomes of these trials with our current data suggests that ADHD pharmacotherapy offers an opportunity to reduce ADHD symptom burden and increase early engagement and longer-term retention in SUD treatment.

Limitations

The current study has several methodological limitations. Our data are from a single site with low racial diversity, a relatively small sample size, and a wide range of available services and treatment modalities, limiting generalizability to other settings and populations. Our clinically diagnosed sample likely represents < 50% of individuals who would meet diagnostic criteria for ADHD using standardized instruments,[18] and the unexpectedly elevated rate of privately insured individuals in our sample suggests this undiagnosed group may differ across other social determinants of health. Our findings may not generalize to the undiagnosed group.

The retrospective observational study design precludes causal inference. Unmeasured covariates or reverse causation may plausibly explain the observed association. Additional covariates not measured here should be explored in future analyses, including prescribed doses of ADHD medication, other concurrent pharmacotherapy (eg, benzodiazepines), medical comorbidity, housing stability, additional social determinants of health, and clinician assessment of global functioning. Further, the finding of a demographic variable (age) significantly differing between groups receiving and not receiving ADHD pharmacotherapy suggests nonrandom bias within prescribing clinicians. This prescriber bias may be fruitfully explored in future analyses and may be controlled for in subsequent prospective, randomized trials, if feasible.

This study did not distinguish treatment dropout from clinic discharge after successful course. Our EHR data do not

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capture prescriptions written outside the affiliated integrated health care system, and this analysis measured medication adherence only among those receiving amphetamine formulations.

In considering how to apply the findings of this study in clinical practice, it is important to recognize that risk and number-needed-to-harm associated with ADHD pharmacotherapy are not well-defined in this population. Future studies should assess adverse SUD outcomes (eg, overdose, death), medical adverse events and sequelae, nonprescribed medication use and diversion, and number-needed-to-harm to inform safe clinical practice.

CONCLUSIONS

Despite these limitations, this retrospective cohort study suggests that treating ADHD pharmacologically is associated with less early attrition and greater likelihood of longer-term retention in outpatient SUD treatment, with the potential to improve functional outcomes. These results warrant replication and testing using study designs capable of addressing the aforementioned limitations. Careful attention to risk-mitigating components of an outpatient treatment frame may allow for safe, individualized trials of ADHD pharmacotherapy in individuals seeking SUD treatment.

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1. When treating adults in an outpatient substance use disorders clinic, what is the expected prevalence of comorbid attention-deficit/hyperactivity disorder (ADHD) in your clinic population?

a. <1%
b. 5%
c. 10%
d. 25%

2. In individuals with substance use disorders (SUDs), untreated comorbid ADHD increases the likelihood of:

a. SUD treatment dropout
b. SUD symptom remission
c. Milder SUD severity
d. Older age at onset of SUD

3. You are treating Douglas, a young man in early recovery from severe opioid use disorder. Despite remission of use, withdrawal, and cravings on an adequate dose of buprenorphine-naloxone, Douglas continues to be late for appointments, lose important items (eg, phone, keys), and leave tasks uncompleted at work and home. In your sessions, he is easily distracted, sometimes forgets session content, and frequently shifts around in his seat. You obtain further developmental history that is consistent with ADHD. You are concerned about these symptoms interfering with his SUD treatment engagement and functioning. After reviewing treatment options, you and Douglas are considering a stimulant trial. Which of the following risk-mitigating strategies will allow for an adequate stimulant trial?

a. Using only immediate-release stimulant formulations
b. Setting up a once-monthly cadence of follow-up appointments and prescription dispensing
c. Regularly reviewing the prescription drug monitoring database and toxicology screens
d. Using only low doses of stimulant medication

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Supplementary Material

Article Title: Pharmacotherapy for Attention-Deficit/Hyperactivity Disorder and Retention in Outpatient Substance Use Disorder Treatment: A Retrospective Cohort Study

Author(s): Kristopher A. Kast, MD; Vinod Rao, MD, PhD; and Timothy E. Wilens, MD

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List of Supplementary Material for the article

1. Table 1 Cox Proportional Hazards Regression Analysis to Identify Predictors of Retention

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Supplementary Table 1. Cox Proportional Hazards Regression Analysis to Identify Predictors of Retention

	HR	95%-CI	p value
ADHD medication	0.59	0.40 - 0.87	0.008*
buprenorphine therapy	0.97	0.59 - 1.60	0.902
cocaine	1.20	0.71 - 2.02	0.498
alcohol	0.78	0.46 - 1.33	0.366
opioid	1.05	0.56 - 1.89	0.863
cannabis	1.17	0.64 - 2.14	0.605
benzodiazepine	0.64	0.30 - 1.37	0.249
other stimulant	0.83	0.48 - 1.43	0.503
bipolar disorder	0.66	0.36 - 1.21	0.176
depressive disorder	0.75	0.46 - 1.22	0.247
anxiety disorder	0.79	0.50 - 1.24	0.299
PTSD	0.87	0.52 - 1.45	0.587
female SAAB	1.14	0.69 - 1.89	0.597
no insurance	0.49	0.15 - 1.64	0.249
private insurance	0.69	0.42 - 1.14	0.147

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