The Role of Medications in the Treatment of Adolescents and Young Adults with Opioid Use Disorder

ADAI | ALCOHOL & DRUG ABUSE INSTITUTE

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I. Introduction

Overview

Adolescent and young adult opioid use disorder (OUD) diagnoses have increased substantially over the past 15 years in the United States [1]. The use of treatment medications for opioid use disorder has also increased, though recent estimates are that only one in four young adults diagnosed with OUD have received any treatment medications. The treatment medications buprenorphine and methadone have strong evidence bases, are considered front line treatment for opioid use disorder [2–5], and are recommended by the American Academy of Pediatrics [6]. Emerging research evidence indicates effectiveness for long-acting naltrexone for opioid use disorder in some populations [7–9] , and a small case series analysis demonstrated it as feasible for some adolescents and young adults [10]. Overviews of opioid use disorder and treatment medications and links to other resources are available from the UW's Alcohol and Drug Abuse Institute and the Substance Abuse and Mental Health Services Administration. The current evidence base, along with expert prescriber and substance use treatment provider guidance on the use of these medications and supportive services, are detailed in this report.

Medication efficacy versus effectiveness and why it matters

Confusion about the effectiveness of the OUD medications buprenorphine, methadone, and naltrexone is understandable, as they are all FDA-approved and sometimes incorrectly described as having equivalent effectiveness. However, FDA approval does not indicate effectiveness, that is, whether a medicine has a health benefit in real world use. Nor does FDA approval establish that their use in actual clinical practice is evidence-based. FDA approval means that a medication has been determined to be safe and have *efficacy*, i.e., there is measureable treatment benefit in a controlled setting. However, the typical lived experience of a person with active opioid use disorder is rarely like that encountered in a controlled environment. Confusion about the meaning of FDA approval has been codified in WA State Law by HB 1427, passed in 2017, which incorrectly states that all FDA-approved medications for opioid use disorder are "evidence-based." Evidence based means that an intervention has been tested in multiple, well designed studies with diverse populations and shown to be beneficial relative to a comparison group. These distinctions are important to understand, as people in positions of authority who can control access to treatment medications, such as judges, legislators, jail administrators, housing providers, parents, drug treatment, and health care providers, may believe incorrectly that the three medications are similarly effective and can be interchanged. They are not, and they cannot.

The potential for psychosocial supports to assist with recovery from opioid use disorder

Social support and behavioral interventions such as substance use disorder (SUD) counseling, cognitive behavioral therapy, or contingency management can be essential for some people with opioid use disorder, however, research shows that on average they do not improve outcomes if they are not used with medications [11,12]. SUD psychosocial treatment interventions for adolescents that have been shown to be effective for marijuana and alcohol, such as the adolescent community reinforcement approach, are less effective for those with opioid use disorder in terms of the absolute level of substance use outcomes achieved [13], underscoring the potential added benefit that treatment medications may provide for this population.

Confusion as to the role of psychosocial supports persists in part because federal agencies such as Substance Abuse Mental Health Services Administration (SAMHSA), National Institute on Drug Abuse (NIDA), and the Office of National Drug Control Policy (ONDCP) continue to state on their websites that medications are effective when combined with psychosocial supports, despite the lack of clear and convincing scientific evidence to substantiate these statements.

A note on language: medications for opioid use disorder

The terminology we are using is "medications for opioid use disorder" (MOUD) to combine the DSM 5 diagnostic criteria "opioid use disorder" with "medications." This is preferred to the term "medication-assisted treatment," which remains in common use (and which we include when quoting interviewees), because this terminology suggests that medications are only to *assist* with other treatment components. This is not the case for many people, and a substantial body of research has found that on average, treatment medications have the most effect on health, cost, and survival outcomes.

Social support and counseling are essential for some people, and can support the effectiveness of medications for opioid use disorder. However, the research can be understood to mean that for the average person, the average substance use disorder counseling does not improve outcomes for opioid use disorder and, in fact, is associated with much higher rates of fatal overdose if not combined with methadone or buprenorphine[14]. High quality counseling, social support, and other supportive components should always be *offered* but not *mandated,* as they are not shown to significantly improve outcomes, and additional requirements often prove to be a barrier to accessing medications by patients. Mandates can also be a barrier to providing services, in particular prescribers' willingness to utilize buprenorphine[15]. Any potential mandates should take into account what they might add to patients who need extra support, balanced against the primary effect of medications and the possibility that additional requirements may prove to be a barrier to medication continuity.

The older terminology of "opioid substitution treatment" is in disfavor as it perpetuates the idea of substitution, which many people misunderstand as "swapping one addiction for another." Continued physical dependence on opioids does not equate to opioid use disorder, per current diagnostic criteria in Diagnostic and Statistical Manual of Mental Disorder, 5th edition (DSM-5). Conversely, medications can provide a foundation of stability and order in a person's life and support recovery.

Language is important, as there remains stigma not just about people who have opioid use disorder, essentially implying that they are weak or bad people who simply need to make better choices, but also stigma around the medications used to manage and treat opioid use disorder, that they enable or perpetuate addiction. Many in the general public continue to believe that the best, perhaps only, treatments for any substance use disorder are detoxification and inpatient treatment; this is not the case

for opioid use disorder, though those interventions can have a role, particularly if medications are incorporated.

Outline

Given the important role of medications in opioid use disorder treatment, substantial increases in morbidity and mortality in Washington State, and reported treatment gaps, we conducted a needs assessment for youth (<18) and young adult (18-24) OUD treatment. This needs assessment includes:

I. Introduction to opioid use disorder and major contextual issues including treatment modalities and appropriate language for describing medications for opioid use disorder.
II. Epidemiology of opioid misuse and use disorder.
III. Review of the research literature.
IV. Summary of interviews with diverse stakeholders in Washington State and national experts.

II. Opioid Drug Trends in Washington State

Current, detailed data on opioid drug trends in Washington State are available at: https://adai.washington.edu/WAdata/. Recent data are provided below.

Pharmaceutical opioid prescribing increased enormously throughout the 2000s; in Washington State it peaked in 2011 when 112 million daily doses of opioids were prescribed (DEA ARCOS). Opioid prescribing in the state has declined slightly in recent years to 104 million daily doses in 2015. A direct link between pharmaceutical opioids and heroin use has been shown in surveys of heroin users in Washington State, with 57% indicating they were "hooked on" prescription-type opioids prior to using heroin, according to the 2015 Washington State syringe exchange survey. Young adults are more likely to report starting with prescription-type opioids than those age 30 and older [16].

Figure 1 shows a decline in high school sophomores reporting past-month use of prescription opioids "to get high" from 10% in 2006 to 4% in 2014, which remained steady in 2016 according to the Washington State Healthy Youth Survey.

Figure 1. Washington State 10th graders, past-month use of prescription opioids "to get high," Healthy Youth Survey

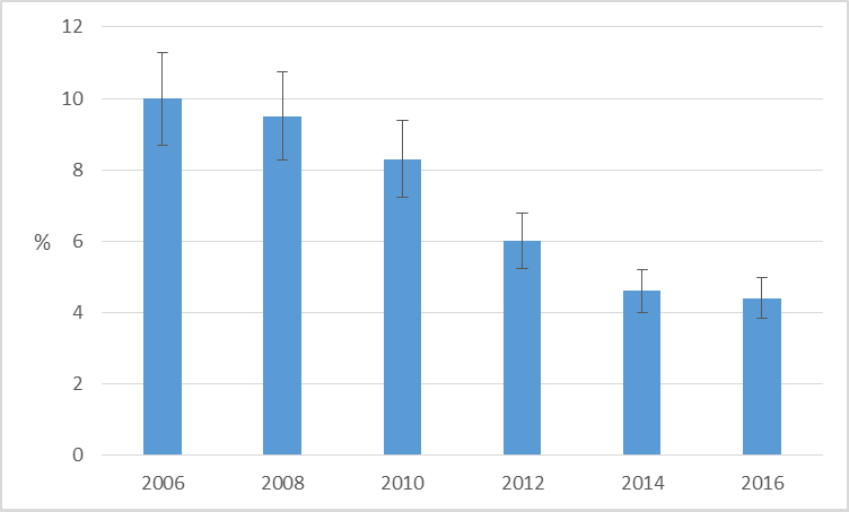


Figure 2 shows that among 10th graders, those who reported past-month use of prescription opioids "to get high" were significantly more likely to report having ever used heroin (27%) compared to those who had never used heroin (2%). This shows a very strong association, but not causation, between prescription-type opioid misuse and heroin use.

Figure 2. Washington State 10th graders, used heroin lifetime, 2016 by past month use of prescription opioids "to get high," Health Youth Survey

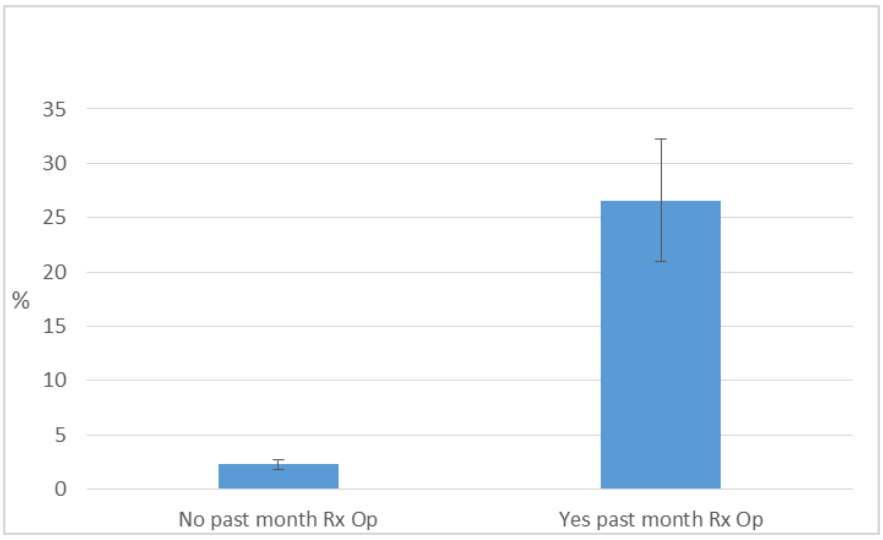
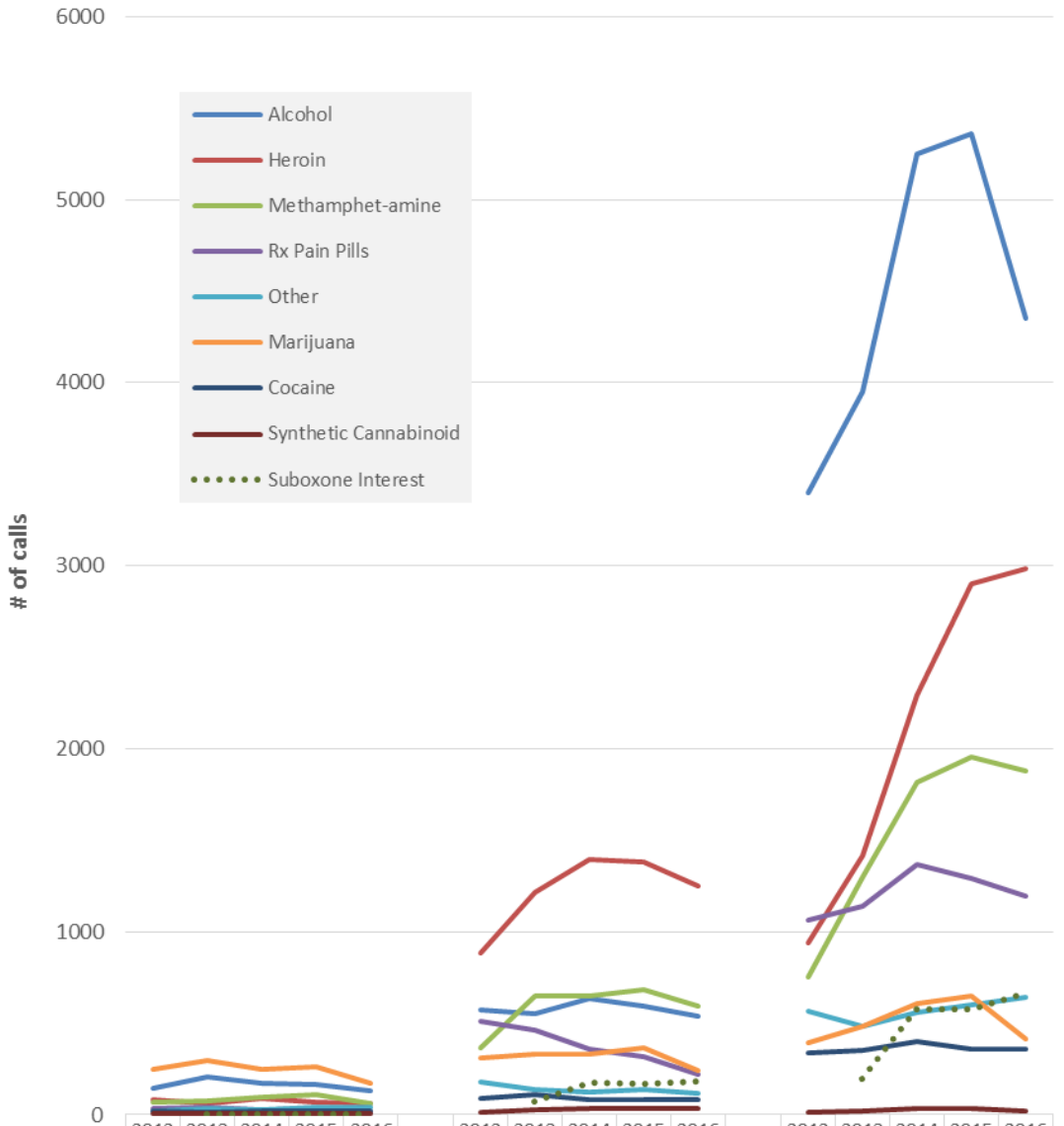


Figure 3 presents data from the Washington State Recovery Helpline, by age group, showing that calls from youth were most often about alcohol and marijuana, although heroin and prescription-type opioids were also mentioned with some frequency. Among those 25 and older, alcohol was the most common substance, followed by heroin. Most striking was that for those aged 18-24, heroin was by far the most common substance of concern. Callers requesting information and referrals to buprenorphine/Suboxone began being tracked in 2013; there have been almost no such calls for minors, only 3-4 calls per week regarding young adults, and an average of more than 12 calls per week for adults over 25.

Figure 3. Calls to the Washington State Recovery Helpline



	Ages <18					Ages 18-25					Ages >25				
	2012	2013	2014	2015	2016	2012	2013	2014	2015	2016	2012	2013	2014	2015	2016
Alcohol	143	208	174	167	131	573	554	637	593	540	3402	3949	5252	5363	4350
Heroin	85	65	89	66	61	885	1217	1397	1380	1250	942	1418	2291	2900	2986
Methamphet-amine	72	73	99	108	64	369	648	651	687	593	756	1301	1820	1956	1878
Rx Pain Pills	34	43	26	32	17	513	464	362	316	222	1062	1138	1369	1291	1198
Other	23	31	29	43	40	181	140	123	138	119	565	483	560	602	641
Marijuana	249	296	252	261	172	308	332	330	369	244	397	481	608	652	416
Cocaine	18	16	20	23	23	92	111	85	85	85	338	355	402	359	362
Synthetic Cannabinoid	5	8	6	7	5	14	25	34	31	34	16	20	34	36	24
Suboxone Interest		1	1	0	1		74	178	172	181		198	580	580	665

Figure 4 shows the dramatic rise in heroin as the primary drug for publicly-funded drug treatment admissions in Washington State among all ages and treatment modalities reported to the Washington State Division of Behavioral Health and Recovery. Prescription-type opioid treatment admissions peaked in 2010 and have declined somewhat; together, heroin and prescription-type opioid admissions were substantially higher than alcohol in 2015. Illicit fentanyl has become increasingly prevalent from 2016 onwards in terms of availability, use, and fatal overdoses [17].

Figure 4. Washington State treatment admissions by primary drug, publicly funded admissions, Division of Behavioral Health and Recovery data

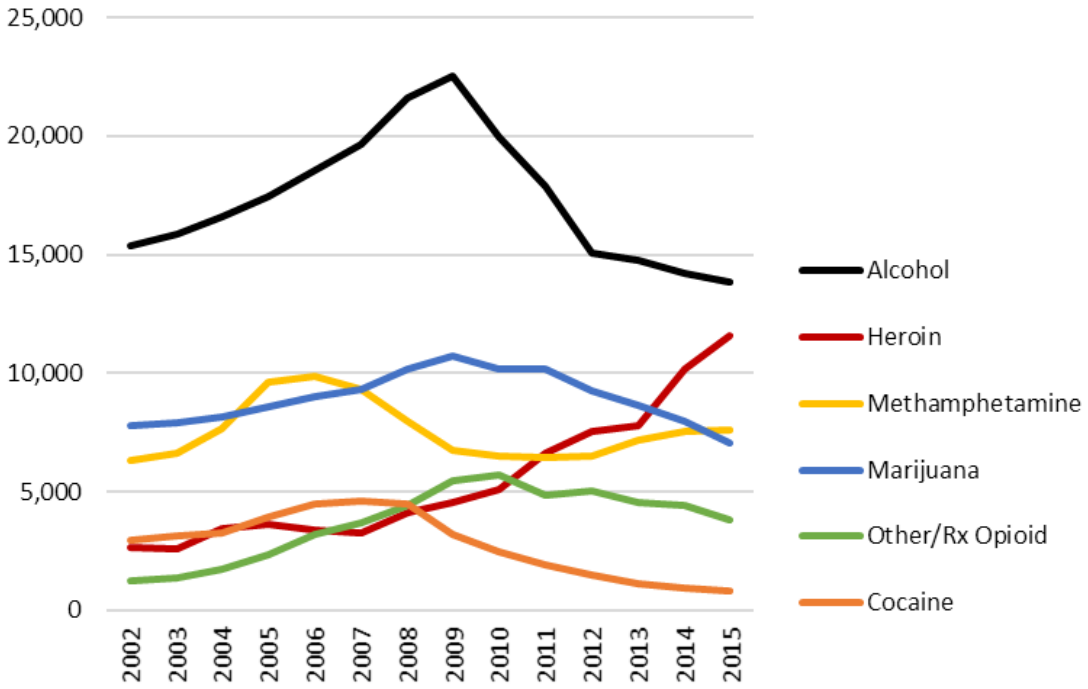
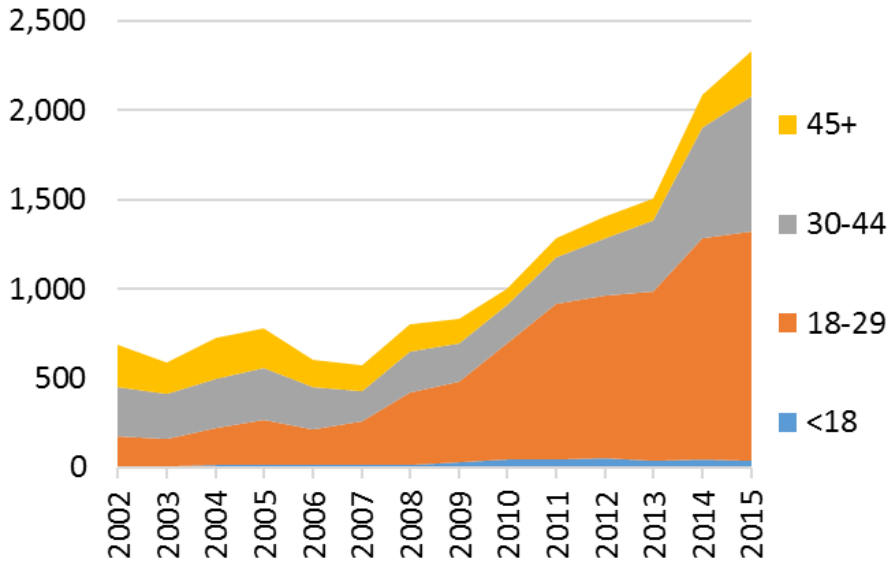


Figure 5 presents first-time admissions to treatment (de-duplicated) for heroin by age at admission. Admissions for young adults ages 18-29 began to steadily increase in 2008 and by 2015 represented more than half of all first-time admissions[1].

Figure 5. First treatment admit-heroin primary, publicly-funded, WA State, Division of Behavioral Health and Recovery data

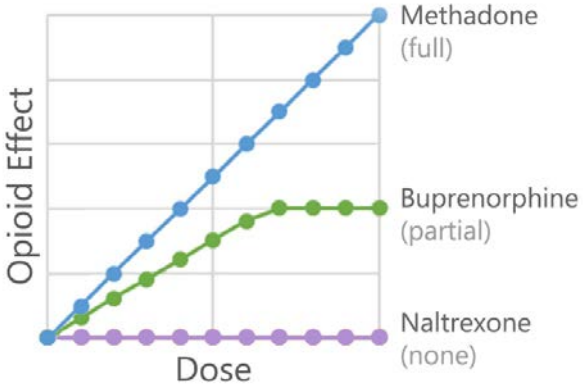


[1] Changes to Washington State publicly funded treatment data documentation in 2016 preclude reporting of trends past 2015.

III. Review of the Research Literature

To date, methadone and buprenorphine have been shown to reduce criminal activity, reduce recidivism, improve functioning, decrease mortality, lower the transmission of infectious diseases like HIV and HCV, and substantially reduce costs [18–24]. Counseling and non-medication based treatment alone are not shown to be as effective as treatments that use medications. Each of the three medications — methadone, buprenorphine, and naltrexone — is briefly described below, followed by research findings specific to youth and young adults.

This graph provides a simplified representation of the different effects of each of the three medications. Methadone, as a full opioid, has increasing opioid effect with increasing dose. Buprenorphine is a partial opioid and has an increasing opioid effect with increasing dose until a plateau is reached, at which point there is not an increasing opioid effect even as dose increases. Naltrexone, as a pure opioid blocker, has no opioid effect regardless of dose.



Methadone

Methadone has been used to treat opioid use disorder for over forty years, and has the most evidence to support its effectiveness. This medication is a full agonist, meaning that it fully activates the opioid receptors in the brain, reducing cravings and withdrawal symptoms. Patients who take methadone for opioid use disorder must go to an opioid treatment program for observed dosing six days a week for the first three months of care [25]. One year of methadone treatment for opioid use disorder is estimated to have a net cost benefit of $4,554, with a benefit to cost ratio of $2.22 and an 89% chance that benefits will exceed costs [26].

According to the Federal opioid treatment standards for opioid treatment programs 42 CFR 8.12.e.2:

> *A person under 18 years of age is required to have had two documented unsuccessful attempts at short-term detoxification or drug-free treatment within a 12-month period to be eligible for maintenance treatment. No person under 18 years of age may be admitted to maintenance treatment unless a parent, legal guardian, or responsible adult designated by the relevant State authority consents in writing to such treatment.*

Buprenorphine

Buprenorphine has been approved by the FDA to treat opioid use disorder since 2002 and there is strong evidence for its effectiveness. Buprenorphine is a partial opioid agonist, meaning it partially activates the opioid receptors in the brain. It is often prescribed in a combination formulated product with naloxone, with the naloxone serving as an abuse deterrent if the medication is taken other than sublingually. Buprenorphine can be prescribed for opioid use disorder by a healthcare provider who has taken course work and received a waiver from the Drug Enforcement Administration. Buprenorphine may also be dispensed at opioid treatment programs[5]. An opioid tolerant person needs to be in moderate withdrawal before taking buprenorphine. Buprenorphine is approved for ages 16 and older. One year of buprenorphine treatment for opioid use disorder is estimated to have a net cost benefit of $3,475, with a benefit to cost ratio of $1.76 and an 86% chance that benefits will exceed costs [26].

Naltrexone

Naltrexone works by blocking the opioid receptors in the brain. It is usually prescribed as a monthly injection, brand name Vivitrol®, and someone taking the drug will not feel the effects of opioids or be able to easily overdose if opioids are consumed. The injectable form of this medication was approved by the FDA in 2010; it has the least evidence to support its effectiveness among the three FDA-approved MOUD. In part this lack of evidence may be due to its newness, with less time for research to be conducted compared to the other medications. Preliminary data from smaller, usually criminal justice involved research suggests that naltrexone is effective for reducing opioid use and suppresses mortality risk[7,8].

One potential drawback of naltrexone is that once the medication wears off, the patient lacks tolerance for opioids and is at a high risk for overdose if they use again. Because it is an opioid blocker, patients must not use opioids for at least 7-10 days before starting naltrexone to prevent precipitated withdrawal. Vivitrol® has not been studied in those under the age of 18. One year of injectable naltrexone treatment for opioid use disorder is estimated to have a net cost benefit of -$17,297, with a benefit to cost ratio of -$0.06 and a 0% chance that benefits will exceed costs [26].

Research findings directly comparing all three medications

No comparative effectiveness trial has been done comparing all three medications to each other in a designed study where people are assigned to take a particular medication. However, a recent large, real world analysis of the use of the three medications among 17,568 people who had an opioid overdose in Massachusetts provides a number of important insights about medication self-selection, retention, and impacts on mortality rates [27]. Buprenorphine was utilized by 17% of people, for a median of 4 months, with a 37% lower all-cause mortality rate and 38% lower opioid-involved mortality rate compared to those not on any MOUD. Methadone was chosen by 11%, taken for a median of 5 months, was associated with a 53% reduction in all-cause mortality and 59% reduction in opioid-involved mortality. Naltrexone was selected by 6%, utilized for a median of one month, with no reduction in all-cause or opioid-involved mortality compared to those not on any MOUD. Of note, the overall opioid mortality rate was 2.1% per year and the all-cause mortality rate was 4.7%, re-enforcing the high mortality rate in this population and importance of reducing both opioid-involved and all-cause mortality.

Current research on young adults (18-24) and adolescents (under 18)

The American Academy of Pediatrics recommends the use of treatment medications for opioid use disorder and recommends that pediatricians be able to prescribe these medications themselves or refer patients to others who can [6]. Despite this expert recommendation, a review of a database of publicly funded treatment programs (n=139,092) found that 26.3% of adults and 2.4% of adolescents in treatment for heroin received treatment medications, and that 12.0% of adults and 0.4% of adolescents in treatment for prescription opioid abuse received treatment medications [28]. A study of commercially insured patients found a substantial increase in opioid use disorder diagnoses and use of naltrexone and buprenorphine among 13-25 year olds in the United States, but only one in four diagnosed received one of these medications [1].

There have been very few studies that focus specifically on the treatment of opioid use disorder in young adults. In an observational study (n=552) of youth aged 20-26 who inject drugs, use of opioid agonist therapies (methadone or buprenorphine) was associated with a reduction in HCV acquisition among young adults. Youth who had received non-medication based treatments or detoxification did not show the same reduction [23].

Research supports the safety [29] and cost-effectiveness of buprenorphine for patients under 18 [30]. However, there have only been two randomized control trials on the effectiveness of currently available treatment medications in adolescents, due to the challenges of conducting trials with participants under 18 [31].

In a double-blind placebo controlled study, 53 patients aged 16-24 were randomized to either a 28-day or 56-day buprenorphine/naloxone taper. Patients with the longer taper had higher retention in treatment and lower opioid use [32].

The other randomized controlled trial for treatment medications in adolescents randomized 152 patients aged 15-21 to either 12 weeks of buprenorphine-naloxone or a 14-day taper. Patients in the 12-week buprenorphine-naloxone group showed reduced drug use and injection, higher treatment retention, and overall lower need for other medications [33].

A chart review of 16 adolescent and young adult patients (aged 16-20) receiving naltrexone at a substance abuse treatment program found that it was well tolerated and acceptable to some patients and their families [10].

Other benefits of treatment medications for adolescents may include reduction in injection-related HIV risk behaviors and a possible lower likelihood of transitioning to injection. Further analysis of data collected by Woody et al. [33] has shown reductions in injection-related HIV risk behaviors among youth on buprenorphine [34]. A prospective cohort study of 462 street youth in Canada found that youth who reported that addiction treatment was difficult to access were twice as likely to start injecting drugs [35].

There are significant gaps in research on the use of treatment medications for young adults and adolescents. However, the existing research supports the use of treatment medications for adolescents and young adults, and guidelines and clinical reviews reflect this [36,37]. Given that many patients and family members believe that “detox” is the treatment of choice, it is important to bear in mind the statement by Sharma et al., “Detoxification is often a necessary, but never sufficient, component of treatment for OUDs” and relapse prevention medications are often necessary [37].

IV. Stakeholder Interviews

A summary of the interviews with diverse stakeholders in Washington and national experts is provided here, followed by a description of the interviewees and the process, with details of interviews and direct quotes provided last.

Summary of interviews

All Washington State respondents identified a serious lack of appropriate opioid use disorder treatment for adolescents, particularly access to treatment medications. Chemical dependency professionals (CDPs) varied in their opinion of buprenorphine and long-acting naltrexone for adolescents, some expressing reservations about its use and others comfortable with extended use; none thought methadone had a place for those under 18 given the care setting. Longer durations of treatment with medications were generally supported for those with longer histories of opioid use disorder; there was greater comfort with medication use with young adults because they generally have a longer period of OUD compared to those under 18. Some CDPs expressed a desire for standardized protocols for MOUD utilization. Three addiction medicine physicians with treatment and research expertise in adolescent and young adult OUD indicated

their support for the use of buprenorphine and long-acting naltrexone as indicated by the severity of opioid use disorder.

A young adult in recovery from opioid use disorder discussed a lack of understanding among the general public and among youth about the potential for opioid use disorder resulting from use and misuse of prescription opioids. They also indicated that awareness and understanding of opioid use disorder and treatment medications was very limited, and that help navigating the treatment system would be very beneficial. They had personally benefitted from the use of buprenorphine and long-acting naltrexone.

All respondents agreed that treatment needed to be client-centered and specific to their needs, and few were comfortable with blanket recommendations regarding specific medications and duration of treatment for adolescents and young adults. Medical providers were all quite comfortable with medications, while CDPs had a range of opinions regarding medications.

Background on interview process and interviewees

A broad array of people were interviewed to obtain different perspectives. Interviewees included people speaking from personal experience with opioid use disorder, their own and their families'. Professionals worked in diverse settings, with varied populations, and in different roles. Medical providers had experience with the three FDA medications approved for opioid use disorder: naltrexone, buprenorphine, and methadone. Interviews were recorded with permission, anonymous by default, and quotes attributed to specific individuals after obtaining explicit permission.

Interviewee work settings represented:

- Inpatient youth treatment
- Outpatient youth treatment
- Youth outreach
- Youth drop-in facility for homeless youth
- Opioid treatment program (OTP)
- Hospitals/specialty care
- Primary care/Office based opioid therapy (OBOT)

Interviewee roles/professions:

- Advocates for opioid use disorder education and treatment
- People in recovery
- Psychosocial treatment providers
- Physicians (MD)
- County and state treatment administrators
- Researchers
- Chemical dependency professionals (CDP)

Interview findings are organized along the following themes:

Treatment needs

- Recognition of the need to treat youth with OUD
- Capacity to deliver MOUD to adolescents and young adults
- Complexity of MOUD and limited youth specific data showing effectiveness of medications lead to hesitancy about its use for some
- Capacity of health care providers to deliver MOUD and appropriate counseling

- Treatment for key populations such as homeless youth, peer opioid users, or parents who use
- Relevance of age in treatment decisions
- Special needs of youth
- Capacity to treat youth at in-patient facilities
- The perception that MOUD is merely substituting one drug for another is impeding progress and is preventing MOUD from being used to treat youth.
- Lack of a common treatment protocol
- The realities of OUD and treatment need to be clearly conveyed to patients and families
- Polydrug use among youth is common
- OUD cannot be treated in isolation and navigation support is needed

Barriers to treatment

- Bifurcated care remains an issue
- Belief systems that can help or hinder
- Limited treatment access for youth with OUD
- Comprehensive understanding of the individual experience is needed
- Recognizing and overcoming inequalities within the health system
- Financial resources and family situations impact treatment options for youth with OUD

Solutions: What does good treatment look like? What works?

- A protocol for treating youth with OUD is needed, but may not be forthcoming
- Routes of communication about how to treat OUD are lacking and/or do not "meet youth" with the communication channels they use
- More school-based education and counselors are needed
- Comprehensive, long term treatment is ideal
- Talking about the duration of treatment effectively
- Treat OUD as the disease that it is, address stigma
- More integrated care and interdisciplinary teams
- Training for counselors
- Connect pediatricians to youth treatment agencies

Detailed interview findings

Theme: Treatment needs

Recognition of the need to treat youth with OUD

All interviewees recognized the need to better address youth (age 12 to 17) as well as young adults over age 18 in order to intervene in opioid use disorder. About half of the interviewees categorized the need for treatment of adolescents and young adults who have OUD as being "High," with the rest responding it was "Medium to High."

One addiction medicine specialist characterized the need for treating youth with OUD as "Extremely High" saying the need is there for adolescents and young adults because they are at a "high risk for lethality," though this comment is about the severity not the numerical demand.

Capacity to deliver MOUD to adolescents and young adults:

Broadly speaking, interviewees saw the capacity to deliver MOUD to youth as being low in Washington State. Capacity was described by stakeholders in terms of: i) the number of providers able to treat with MOUD, as well as ii) those knowledgeable and well trained enough about how to correctly treat with MOUD, and iii) those who lack a sufficient understanding of the role MOUD for treating OUD. More than half of those interviewed thought the capacity was low, and the remainder of the interviewees responded that they thought the capacity to provide OUD treatment to youth was "Medium" (those who said Medium worked at agencies that did have capacity).

A representative sample of comments made about the capacity to deliver MOUD is included in the following statements:

- A long-time addiction medicine specialist at a large urban hospital said, "I don't know of any programs for youth that do MAT. I wouldn't know where to send a patient [of that age group under age 18]."
- A physician who runs an opioid treatment program, as well as office based opioid treatment programs, echoed this view, saying, "I don't know of anyone who provides MAT" [with youth].
- Another physician-researcher said the number of providers is "very insufficient."
- A CDP voiced the view that many youth he sees are homeless and cannot afford the treatment.
- A physician similarly declared: "Access to treatment does not exist, especially if you don't have money."

One MD providing buprenorphine in an urban youth drop-in center added, "There are not enough providers. Physicians get trained but don't use the waiver."

Where MOUD for youth/young adult is provided they are well below capacity to deliver services. For example, in one youth drop-in day facility, there is one doctor who can prescribe buprenorphine who is onsite 2 hours per week.

Complexity of MOUD and limited youth specific data showing effectiveness of medications lead to hesitancy about its use for some.

There is some ambivalence among the care community surrounding MOUD use with respect to whether or not it is appropriate for youth under age 18. Concern centers around brain development that is still taking place for adolescents, particularly youth under age 18, but also for those in their mid-twenties.

One counselor said, "You want to get a kid through so that their brain is not hurt." He said, "We can learn how to support issues, urges and behavior so that kids can learn how to be more functional and whole."

In the medical profession as well there was some concern about MOUD in this age group. For example, one physician who mainly treats young adults over 18, but has had the occasional patient under age 17, noted that it is important to make a distinction between how you treat different age groups and what you treat them with medically.

Three physician-researchers who are experienced in youth and young adult opioid use disorder treatment, Drs. George Woody, Scott Hadland, and Marc Fishman, indicated their comfort clinically providing approved medications for opioid use disorder for youth and young adults, primarily buprenorphine and long-acting-naltrexone. They based their opinions on:

- positive research results with these age groups (even though the one randomized controlled trial led by Dr. Woody only lasted 12 weeks),

- clear evidence that longer term prescribing is beneficial among adults,
- that it is reasonable to generalize these findings to young adults, and
- the severe, potentially fatal, consequences of *not* using medications.

When asked about potential, theoretical concerns around brain development and the impact of MOUD during adolescence and young adulthood, they acknowledge that we do not know the impacts. There could be impacts, but based on their experience and knowledge of the research, their clinical practices, and the clear, present, and significant need to immediately intervene in a dangerous medical situation, they strongly supported the use of MOUD with youth and young adults. Dr. Hadland's quote represents the perspective of each these physicians: "the benefits far outweigh any theoretical risks."

As described in the literature review above, there have been limited randomized controlled trials with young adults. According to Dr. George Woody, who conducted the seminal study [33], this is because a decade ago when their study was conducted, the number of youth and young adults with opioid use disorder was relatively small and clinical trials, particularly with minors, are expensive and complex.

The regulatory framework for use of MOUD in this age group has put certain precautions in place. For instance, methadone cannot be given to anyone under age 18 unless there have been at least two documented cases of "failed" treatment of the youth. Additionally, interviewees overwhelmingly did not favor use of methadone with youth, because of the atmosphere they perceive as being negative for youth, with long-time/older users "telling stories, rumors" and the fact that methadone clinics have historically served older adults. However, in Washington some private opioid treatment programs opened in the late 2000s in the suburbs that overtly had amenities aimed at young adults, including play equipment in the lobby for their young children, a contrast to long-standing clinics in urban areas.

A long-time CDP who works with youth and young adults calls methadone clinics the "Convention", short for the "morning addict convention"—it's not a place young people should be exposed to, he said.

"We know from adults that relapse is common as they start with treatment," said an addiction medicine physician-researcher; this is also confirmed by Woody's 2008 study. For those under age 18 and young adults, 12 weeks of treatment was significantly better than 2 weeks, but was still inadequate, as relapse to opioid use quickly followed discontinuation of buprenorphine. In every instance where physicians were asked if they were in favor of treatments of buprenorphine or naltrexone for periods of less than 12 weeks, all of them responded that the evidence does not show positive outcomes for such a short duration. Service provision in a medical office-based treatment program was seen as optimal, provided there is some way to support youth, especially in the age group of 12 to 16, in keeping their appointments.

Dr. Marc Fishman mentioned that his clinic has had adolescent patients for whom the medical staff provide in-home administration of long-acting naltrexone shots in order to improve adherence.

A long-term CDP and county program manager said, "MAT is important but it should not be a primary goal. It should be used in conjunction with cognitive and behavioral therapies." Dr. Woody framed it somewhat differently: "Medications work right away… and they provide an opportunity to address and change the life styles, but they do not do it themselves… psychosocial interventions… take much longer to have an effect than medications."

A physician with OTP and OBOT practices said, "There is no ideal solution." "[OUD] is a disease with no hypotheticals." This same physician deems that a treatment plan for each patient is always an individualized decision that should be arrived at through shared decision-making and ideally should include:

- Lifestyle—Encourage the person to become functional as much as possible.
- Behavioral Therapy—Encourage the person to make lifestyle modifications through Cognitive Behavioral Therapy (CBT), e.g. in a group setting. Group settings are "extremely effective." They are currently available for adults (but not for youth at their facility). For youth, they are referred to an outside agency. They recommend counseling that would involve finding sources of support, finding out what kinds of support there might be with family/ foster home.
- Mental Health support—It's often easier for youth to get support through a mental health agency/support system. The mental health capacity of providers is limited.
- Family/friends—Support for youth/young people from family and friends is very important so involving them is key.
- Medication is only used for stabilization and harm reduction. MOUD "cannot cure a chronic condition." The physician compares it to treating other chronic conditions like diabetes and hypertension with medications.

As an addiction medicine specialist, one physician noted they would not want to limit treatment duration, and that duration has to be patient-driven. "The patients who do the best are the patients who stay in it for years." "Patients need to be seen weekly [initially]; then, if they stabilize and do well, they could be seen once a month or beyond that. But those continuing to use or have instability in their lives…if they require being seen once a week…it's difficult for the physician to be a sole provider." More resources are needed to increase the capacity to treat, manage, and provide important supportive services for patients needing ongoing care.

Another physician who was completing their residency notes that there is still more need for an evidence base about what MOUD would work with youth, though broadly she and other interviewees agree that buprenorphine can be helpful. A caveat she noted is that "Some Suboxone [a brand name for a buprenorphine formulation] can be easily made into films that are used recreationally" and that this is a problem. Local data from the King County syringe exchange survey data indicate that non-prescribed use of buprenorphine is virtually all motivated by a desire to self-detox or prevent withdrawal, not for euphoric/"recreational" effects, a finding reported in the research literature as well [38].

Capacity of health care providers to deliver MOUD and appropriate counseling

There is a need for training, and perhaps re-training, of those on the front line who are treating youth and young adults who have opioid use disorder. Both short-term training and long-term, systematized, ongoing training are needed. Steps in the right direction include several medical residency programs that require that each resident be trained in buprenorphine. There is training of CDPs at the county level (in King County) about OUD and youth, but it is slow-going. Due to high job turnover, there is a need to constantly train CDPs so that they understand what MOUD is and what it does, and also offer training on the best counseling techniques to use, for interactions with youth especially. Previous conversations with CDP trainers indicate a mix of ignorance and antipathy regarding MOUD.

One recent medical residency graduate remarked: "A lot of people on the front line don't know what Suboxone is, how it decreases the risk of overdose… It is assumed that people on the front lines would know …. People talk about it …with lots of slang and stuff… but it doesn't mean necessarily that they know it." This provider was surprised that most on the front line "went from 'zero'" in their knowledge of MOUD concerning what the medications are and what they do.

One policy employee working on the counselor side said, "A lot of people working in this field" have gotten into this field through "abstinence-based treatment and abstinence-based support" and counseling, and "so it is a philosophy and a perception about recovery" that has to be revisited and in some cases changed.

Treatment for key populations such as homeless youth, peer opioid users, or parents who use

Youth who develop OUD are often homeless or living in dysfunctional families. For those living with family members, it's often with their grandparents, according to a manager at a statewide referral agency. "There is a kind of emotional pull that addiction takes on the family."

The issue of homeless youth not having the money for transportation was identified as a major issue that prevents them from getting to treatment. This issue was cited by CDPs and a physician who works at a youth center (e.g., one CDP often takes clients directly to treatment himself for this reason).

Additionally, youth living with foster parents and in unstable settings were identified as a common reality because of the unsafe home lives of many youth and young adults. They may be living with others who use, which makes ongoing recovery challenging. One physician at a facility that has treated a few youth under 18 observed that they tend to have unstable housing or are completely homeless. "Some are living in their car or can go to their apartment. They often live with friends (or family) who are also using."

A number of counselors agreed that what is key for youth to overcome addiction is "…once they are treated, avoid getting them back into the same environment. Change is usually needed."

"Every individual is different." So the determination as to whether or not to use MOUD has to be on a "case by case" basis, said an addiction medicine provider-researcher.

An issue that arises for homeless youth is that they are often enmeshed in a social network of other heroin users with whom they live in squats and/or socialize with constantly. How to engage with peer social networks with heavy opioid use is little researched, but a very important psychosocial issue according to the child psychiatrist and researcher Michael Rutter. We know from research with adults that one of the factors most strongly associated with retention in methadone treatment is having a home that is "conducive" to recovery [39] and there's no reason to think this would not be important for youth.

Relevance of age in treatment decisions

There are important distinctions between what happens for youth vs. what happens for adults. A counselor remarked, "If you're 23 and injecting heroin vs. 14 or 15 injecting heroin, you have several years of experience on you, and so you know probably know more about buprenorphine and you may have even tried it a few times by that point." It's different for that age group compared to an adolescent.

Another counselor remarked that youth under 18 are "fragile" and we must remember how "sad" it is that they are using. The factors that brought them to that point must be carefully unpacked.

We know that for those with OUD that it is "extremely hard for adolescents" to access medication, said an addiction medicine physician-researcher, adding that they felt a clear need for those over 16, but less so for younger people.

The reality is that many youth are living on the street and have nowhere to go. It is a problem of homelessness that leads to adolescents needing a bed, food, a "safe place." The situations of not enough housing for youth, living on the street, and not being safe in their home environments need to be recognized. Reports of treating increasing numbers of young mothers with OUD and other polydrug use in Neonatal Intensive Care wards in Washington State also point to the need for proper care needed for both the mothers and the infants born to pregnant women with addictions. "If the mother is dismissed from the hospital, her baby may not be," as one state employee working in child welfare remarked at a public forum in June 2017. Providing the mother ongoing MOUD is key to her own health and ability to parent. Further, we know that neonatal abstinence syndrome is a manageable short-term health condition [40].

Special needs of youth

Among youth, there are high-risk and underserved populations. These include homeless youth as noted, and may also include people of color, LGBTQ, court-involved youth, young adults, and pregnant or parenting mothers. Issues of identity as well as legal system involvement are often integral to the types of treatment that are either required, ideal, or prohibited. Drug use is often not the most important issue to a person with substance use disorder, and in fact may be an important mechanism for dealing with stressful situations and issues. A comprehensive, trauma-informed approach to assessment and treatment is important to create relevant and, in turn, effective treatment.

Capacity to treat youth at inpatient facilities

A counselor at an adolescent drug treatment program had this to say about MOUD: "I believe that the potential benefit of MOUD is huge, but it is not as often used well. So it becomes a substitute that is used for way too long—not with kids, but with adults, you see Suboxone used in long-term treatment. That is not, as I recall, what it was initialized as." They said MOUD "seems to hold some promise" but were unsure of its usefulness with treating youth.

Emergency shelter and residential treatment beds are not available for youth in sufficient numbers. One physician who specializes in treatment at a youth center said: "If someone is really unstable…if they have comorbid psychiatric conditions, our program is not the best place for them. We're barebones. That person needs an Intensive Outpatient [Program]."

The reasons for seeking inpatient treatment should be clearly delineated: is it because of the nature and severity of the person's opioid use disorder, is it because it is viewed by the family as the right kind of treatment, is it because of social circumstances/control, or for other reasons? Previous work in Washington State has found that many youth in inpatient treatment as part of a juvenile diversion program for chemically dependent youth did not meet the required diagnostic criteria for an inpatient admission [41].

Abstinence has long been viewed as the goal of treatment, however this is unrealistic for many people with substance use disorder and can be counterproductive if it leads to discharge from a program that is helping reduce use and improve functioning for clients. "It's very hard for physicians specifically—and for CDPs—to have this idea of maybe the goal isn't necessarily sobriety but it might just be harm reduction," said a medical provider serving homeless youth. Dr. Fishman says that abstinence "should be seen as a gradual achievement with incremental progress, and failure to achieve this aspirational goal should not be grounds for discharge from a program…".

The perception that MOUD is merely substituting one drug for another is impeding progress and is preventing MOUD from being used to treat youth.

Many who were interviewed said that many CDPs were trained with detox treatment and counseling as the "best solution" to treating youth with drug addiction, and called it either "difficult" or "slow-going" to change their perceptions. Confusion centers on the fact that while it is true on one level that MOUD is a drug—a pharmaceutical treatment—the evidence base that it improves a broad range of outcomes is clear, consistent, and convincing. Nevertheless, changing this perception about the value of MOUD takes time, even among these front line care providers, in part because old habits, and perceptions, are difficult to change.

Another contributing factor to discounting MOUD by the counseling profession could be the fact that many CDPs have themselves come through detox and/or an abstinence treatment, most often for alcohol use disorder, so there is a tendency among them to believe that abstinence is the best solution.

A CDP put it this way: Talking to young people, they always want to "be free of addiction." But, he said, MOUD does not help a young person to be "free of addiction."

This raises a critical issue: how MOUD is framed. It can be viewed as recovery support as well as relapse prevention, not as perpetuating addiction and one's identity as an addict. For this reason, an accurate understanding of MOUD—that the DSM 5 is clear that a person on medications, dependent on opioids, but without psychosocial dysfunction no longer meets OUD criteria—is essential and needs to be reflected in how medications are framed from the first point of contact onwards.

One MD says there is confusion among patients and parents about what long-acting naltrexone is. "It's not a substitute opioid—People think it is. It isn't." The same MD, currently a resident, said she's never seen long-acting naltrexone used successfully. "Unless they have an alcohol addiction as well… then it's a 'two-for'" and could work. Conversely, Drs. Woody and Fishman, and other physicians, have had some patients do well on long-acting naltrexone. Dr. Fishman notes that "while for some patients drop out is a limiting factor, for some patients it is beneficial over long periods."

Lack of a common treatment protocol

A protocol for how best to treat youth (age 12 to 17) is badly needed, according to a CDP who is currently a county program manager, "We need to have a starting point for treating 12 to 17 year olds… MAT needs to be done in combination with counseling/therapy. The same is true for adults, 18 to 25…. The right mix is not often arrived at." Conversely, Dr. Woody's perspective on counseling was that the "environment in which they are living is more important," including the influence of peers.

The realities of OUD and treatment need to be clearly conveyed to patients and families

Information about what treatment is—what the prospects of success and of relapse are—are not adequately known or communicated to youth and families. One addiction medicine physician-researcher described it this way: "Typically, one way or another they stumble into a 28-day program that gets sold to them as the cure….Although the child might be doing well in a controlled environment, there's a very high chance of relapse upon release."

The strong likelihood of relapse needs to be communicated. One addiction medicine physician-researcher noted that only half of all of their patients will stay with treatment for a year or longer.

Polydrug use among youth is common

Informants stated that about half or more than half of all youth they treat are using alcohol, methamphetamine, cocaine, marijuana, or benzodiazepines, along with opioids, and one physician said the youth she regularly encounters on in her practice are using all of these substances.

She said: "Almost all under 18 are using other drugs. Some are using benzos [benzodiazepines]. Methamphetamine is common. The urine drug screen shows that they're using other things—almost all of them." She added that when she and her colleagues meet with the youth, "We take a thorough history. Kids are open about what they're using."

A physician observed that among adults, many think if they stop opioid use they will be fine, but what we find as we treat them is that "some other drug or alcohol use may continue while they are still addressing their opioid use." Others report that polydrug use often decreases after several months of stability on methadone or buprenorphine.

A counselor who works in a facility that treats youth said, "The majority of kids are using one more than one substance. Very few kids are just taking one substance." Among the youth admitted to his facility, more than half are using more than one substance.

He reported polydrug use among those they admit as follows:

- 60% alcohol use
- 30% amphetamines
- [80% marijuana]
- 30% report use of opioids

An advocate and educator about prescription opioids and their dangers noted that adolescents need to better understand the "potential for experimentation with drugs leading to addiction."

OUD cannot be treated in isolation and navigation support is needed.

Safe housing and a "no judgment environment" for counseling are key to engaging them in the treatment, as is having a dedicated "patient navigator," a person who can help the youth navigate where they go for treatment, how they get to the appointment, what is needed for follow-up, etc. These sentiments were expressed by a young adult in recovery for opioid use disorder, a treatment advocate, and a CDP treatment provider.

- The need for a patient navigator was brought up by several interviewees. Someone is needed to "make the calls" to connect the person to treatment and to appointments. "This is key" (person in recovery).
- The biggest problem, one CDP said, is "we have is to bring services to them. We even have trouble having them go several blocks to go (for basic tests, blood work, etc.)." "Adolescents, even young adults… find having to go a little out of their way difficult and cumbersome. …We can't just create these little silos where we send kids to. It has to be an outreach kind of intervention."

Others concurred with the critical role of a person to help, but noted that the issue of patient navigators was challenging from a financial point of view. A counselor noted the following:

- Someone has to be a patient manager. There is no way to bill that yet. It has to be someone in the professions. It ought to be someone who can interact with all of the players on behalf of the patient.
- There is the conundrum for providers—if a health care provider is willing to liaise with the others, the question remains of how would that provider even get paid for that.
- "Places are coming up with fixes…Some are getting all of the players in the same place, but you're still dealing with three systems."

One facility in King County has enlisted a YouthCorps volunteer to serve as a patient navigator to assist youth to ensure they get to their appointments. One person in recovery said that they reached a point where they were so sick they could not make phone calls and relied on a family member to help set up necessary appointments.

Theme: Barriers to treatment

An array of barriers contribute to the unavailability of effective care, according to the interview participants and other stakeholders. There appears to be broad agreement that integrated care is what is required, and that government, payers, and health care systems are in the moving in that direction.

Bifurcated care remains an issue, though the state is transitioning to a more integrated approach to care and treatment.

A CDP observed: "Treatment of youth who have OUD tends to occur in the context of three services—mental health, psychiatric treatment (usually on an outpatient basis), and substance abuse treatment." The state is attempting to make significant changes in the systems.

- "They are trying to drive the system to attention to a co-occurring model. It's going to take a long time to get where it needs to be."
- "People have a very siloed view of their field."

"…[T]argeted psychotherapy and psychiatric medications can help when used along with SUD treatment medications." according to Dr. Woody.

Among other barriers, beyond the lack of capacity, both in terms of numbers of providers and trained expertise with opioid addiction, the following issues were identified as being problematic or in some way hindering progress for effective care and treatment for those with OUD.

Belief systems that can help or hinder

Knowledge among youth, parents, teachers, and the general public about OUD is not seen as adequate. Knowledge about MOUD, what it is, and what the evidence base for it is, is also lacking among health care providers, as was described above regarding capacity to provide MOUD and appropriate counseling. In this section, we discuss some of the key beliefs that are seen as putting up barriers to youth understanding of addiction and how to prevent it and overcome OUD.

"Invincible youth syndrome"
Various issues were identified as influencing the youth and young adults with OUD, and among those listed as paramount is the perception that youth have that they will not become addicted. A few referred to this as the "Invincible Youth syndrome."

Motivations for drug use among youth under age 18 may vary. Among them are peer pressure, ease of access to prescription opioids, and a belief that the opioids, because they are legal, are not harmful. A common belief is that because it's not being injected and because it can be prescribed by physicians, a prescription opioid is not harmful.

This perception about prescription opioids being harmless and not addictive was cited by a young person in recovery whom we met with for this study. When they first started using prescription opioids recreationally in their 20s, they did not think of themselves as a drug user. That was something they associated with "real addicts." That is, as they put it, "Because I wasn't injecting, I thought I was fine."

They developed a pattern of using prescription opioids non-medically after minor surgery. They described that opioids made them feel good and were easy to refill. A few years later, after a different surgery, the refill option was not there. The oral surgeon refused to give a refill after wisdom teeth were removed so they found another means, a supplier friend, and from there they developed opioid use disorder.

Knowledge among youth, parents, and families about what treatment options are is poor or lacking.
Parents and other adults, as well as other members of households where youth may be living, may not be aware of the signs of addiction or may not know that their children are using. Lack of understanding of addiction and the possibility (if not likelihood) of polydrug use among youth is prevalent. Many observed that parents need to become better informed and educated about the problem of prescription opioids.

Perspectives included that—both for parents and youth—they have "no idea what the problem is. They have no idea what medication might be indicated," according to a physician. One parent who lost a child to overdose observed that for their family, even with all of their financial means to help to help their teenager, it was "still a quagmire." The system is hard to navigate. Of those who have discovered their teenagers using, sometimes as a result of an overdose, a few describe themselves as being "clueless" (e.g., the film "Out of Reach," a news report with Maria Shriver). The level of ignorance is high even among very attentive, engaged parents.

Another misconception concerns what treatment for OUD is. Two CDPs pointed out that most youth think that the only treatment is rehab consisting of in-patient stays in a clinic, in lockdown for a year. "There is insufficient understanding of the spectrum of care and treatment that is available." They also think of treatment as something that is expensive—as something that they cannot afford. In 2017 Medicaid and Medicare provide good coverage for outpatient treatment and medications, as do many private insurers.

There is a strong need to fight stigma and discrimination about opioid use, misuse, and abuse.
Another parent speaks to the importance of fighting stigma and discrimination about opioid use disorder, observing that when parents mention their own children's addiction or drug use, they often so in hushed terms. As one parent of a child who died of overdose stated, "Those who use are ashamed and don't want to be judged." Families also perpetuate stigma, this parent explained, by talking of adolescents' drug use in hushed voices, or over compensating by not wanting a methadone clinic or safe drug consumption facility in their backyard. This pattern of keeping OUD in the shadows can impede treatment. Many interviewees spoke of the need to see OUD as another chronic condition, pointing to past successes decreasing stigma with depression, and before that, cancer.

Limited access for youth with OUD to treatment

There are insufficient treatment options and limited facilities for youth. There is broad agreement that there are not enough treatment options for the age group of 12 to 17, whether its MOUD, inpatient, or outpatient services.

Overall in the state, there are not enough residential treatment slots/beds for youth or young adults, particularly those under age 18. That is changing with plans to open nine new facilities in Washington State over the next few years. Many pointed to the fact that adults need to be separated from youth (under age 18) as being a requirement that resulted in few beds for youth, as most facilities are oriented to adults.

The problem of not enough beds is compounded by more and more youth having unstable housing. A youth center physician says many are "completely homeless. Some are living in their car or maybe can go to their apartment. They often live with friends (or family) who are also using."

A number of counselors agree that it is key that once youth are treated there is a need to avoid getting them back into the same environment. Change is usually needed. One seasoned CDP said we need to "offer a safe place for kids with providers that are seen as trustworthy. They are looking for safe environments."

Comprehensive understanding of the individual experience is needed

We need to have a better understanding of youths experience and what is influencing them. We need to understand the systemic issues, including the full range of factors that may be going on in the lives of youth. This includes: youth as they relate to their family systems, homelessness/living on the streets, early exposure to drugs, including opioids, but also exposure to other nonmedical use of drugs. We need to support adolescents with a clear "path to health." How youth interact with the health service delivery system is influenced by their ethnicity and background. Literacy and an adequate understanding options are important issues.

Recognizing and overcoming inequalities within the health system.

The health system and mechanisms that treat youth and adults have inherent inequities, as has been shown in differential referrals and punishments handed out to young people based on their race or economic status. Youth of color are disproportionately low income and therefore may not be able to pay for MOUD. From a provider's perspective, Medicaid reimbursement rates for treating opioid use disorder may be so low that they take no or a very limited number of patients on Medicaid. Reimbursement schemes are skewed in favor of those who may have private insurance and who therefore can afford to pay a provider for buprenorphine treatment, for example. By contrast, youth who are from lower-income settings or who may be homeless won't generally have MOUD as an option, nor are they likely to be aware of MOUD as an option, a perception borne out by recent research showing lower buprenorphine and naltrexone prescribing rates to youth of color [1].

"Not all youth are created equal in the eyes of the system," according to one experienced CDP.

Financial resources and family situations impact treatment options for youth with OUD

At this time, there appear to be some increases in resources being directed to treatment for youth and young adults. However, there is a widespread belief that there are inequalities in the system, demonstrated by the type of treatment a youth or young adult may receive according to his/her economic status, geography, whether he/she is insured or not, etc. Even within those insured, whether or not one receives long-acting naltrexone or buprenorphine is often dictated by the degree to which a youth may or may not have family support, according to several CDPs. Physicians treating youth with these medications indicated their concern about medication adherence for those without strong family support.

Bureaucratic/insurance hurdles in how treatment is covered are common

Ability to pay for treatment varies according to the individual and is often linked to his/her insurance, or lack thereof. Medicaid does cover all three OUD treatment medications, but there are complexities regarding reimbursement for dispensing in an opioid treatment program and lower visit reimbursement rates paid by Medicaid compared to private insurers. Additionally, there are some complexities for buprenorphine, which is available indifferent doses and forms (i.e., tablets versus films) that patients or prescribers may require or prefer.

At present, in King County, benefits can only be delivered through one agency at a time, which means that if a person is facing more than one challenge, for example, OUD in combination with domestic violence, or OUD in combination with homelessness, she/he cannot get seen by the other agency until one agency closes out the benefits for that individual first.

Clinical pathways vary greatly, with some office-based opioid treatment programs requiring three separate visits, often over the course of many weeks or months, before a person is provided any medication. More

recently, several low barrier buprenorphine programs have started in the Seattle area. These low barrier programs aim to meet people where they are, for instance at syringe exchanges. Some provide drop-in hours and will do buprenorphine inductions at the first visit if medically appropriate. Offi-e based opioid treatment with buprenorphine is often perceived as a single, high-resource, high-intensity, high-requirement model, but it need not be so [42]. The Cures Act funding to DSHS DBHR in 2017 should help increase access to low barrier buprenorphine.

Solutions: What does good treatment look like? What works?

It is broadly recognized that a proper clinical assessment needs to be done at the outset and at periodic intervals to ensure that any patient with OUD is provided the appropriate type and level of care and supports. According to Dennis Malmer at DBHR, five more clinics for treating youth under age 18 are planned. However, as far as treatment for youth with OUD under 18, the options for where they can be treated are considered limited or non-existent.

Interviewees identified the following as possible solutions:

- Overnight care/residential treatment for youth need to be expanded.
- More standardization of treatment is needed with well-trained counselors.

A protocol for treating youth with OUD is needed

Confusion about how to apply MOUD, at what age, for whom, and for how long, persists. There is also variability among physicians and their prescribing habits when it comes to treatment, with some being very strict in having patients adhere exactly to a protocol and others having more flexibility. Treatment styles may vary. One MD observed: there is "such a range in who prescribes and how." For example, for some, one misstep by the patient means they will say "we're done" versus others who will say "whatever it takes."

Given the severity and potential dangers of opioid use disorder, it is important to note that buprenorphine and methadone reduce mortality rates by 50%, and that long-acting-naltrexone is protective of overdose while it is at therapeutic blood levels. That is, these medications can be used very safely, and therefore good clinical judgment can be used by providers to craft models of care as needed by patients and as supported by their care and social networks. Dr. Fishman gave the example of his willingness to use long-acting naltrexone with a youth who was a heavy alcohol and marijuana user who had used opioids only a few times because of the strong opioid overdose protective effects of naltrexone and their concern about high-risk substance use by the patient.

Our summary of the literature and clinical expertise of the interviewees is that there are not and may not soon be protocols for youth and young adults for MOUD, but the evidence for MOUD is positive and clinical experiences of expert physicians indicates the appropriateness of crafting patient specific plans with MOUD that focus on engagement, retention, and improved functioning.

Routes of communication about how to treat OUD are lacking and/or do not "meet youth" with the communication channels they use.

Most youth think that the only treatment is rehab consisting of inpatient stays in a clinic, in lockdown for a year. There is insufficient understanding of the spectrum of care and treatment that is available. The main information and referral resource is the Washington State Recovery Helpline. Data provided in the epidemiology section show the large volume of calls regarding opioids, particularly for those aged 18-24, and the substantial volume of calls inquiring about buprenorphine/Suboxone. Current staff and volunteer

resources are limited. Projects are underway to provide training and tools to the Helpline regarding opioid use disorder, treatment decision making and a robust buprenorphine treatment directory in partnership with the Alcohol and Drug Abuse Institute at the University of Washington. These will provide necessary tools, but advertising to promote the Helpline and staffing to implement, maintain, and improve the tools, as well as to evaluate their use, will be needed.

Social media and other communication tactics need to be used and tested to determine which messages resonate with youth about healthy living and opioid risks, and about how to get treatment and where to go**.** The post-millennial generation is reaching early adulthood, so there is a need for innovative and creative approaches to counseling and treatment, since young adults have very low primary care utilization rates. The post-millennial generation has some unique and new characteristics partially due to the access they have to information and the unique ways they typically interact with each other via technology.

Ultimately, the goal needs to be changing the nature of the interaction between the front line clinicians and the youth, so that youth know they have a ”safe environment” and can focus on becoming more functional again, according to a buprenorphine prescriber for youth.

More school-based education and counselors are needed

Prevention is needed from an early age. When one frequent speaker on the topic of opioids goes to high schools, they are “always amazed” to discover that high school students are not well informed. For example, they don’t know about the “Good Samaritan law,” for the most part.

Drug and alcohol counselors are needed in all of our schools, according to one parent who lost their teenager to an overdose. Another suggestion from this concerned parent/advocate was to introduce into the school curriculum “something that looks like a health class, which would include mental health content. Students need the tools to be equipped to deal with anxiety, bullying, or whatever pressures they may be facing.”

Several interviewees—providers and lay people alike—said there needs to be more information out about opioids and what they can do, particularly at the time of prescribing. A comprehensive and patient-friendly flier is available at:

https://wahealthalliance.org/wp-content/uploads/2017/01/Opioid-Medication-Pain-Fact-Sheet-revised.pdf.

It is essential that the prevention educators also understand opioid use disorder and evidence based treatment options as they will often be called upon for information and referrals.

Comprehensive, long-term treatment is ideal

To the degree possible, treatment should be long-term and involve the family as much as possible.

A program for youth could include the following components:

- Comprehensive, standardized assessment,
- Evidence-based behavioral interventions,
- Medication treatment and management: Overwhelmingly, the interviewees are in favor of buprenorphine for this age group with several indicating the utility of long-acting-naltrexone for some youth.
- Family and parental involvement.
- School involvement—and, where possible, special schools for those in recovery—are helpful.

Dr. Marc Fishman, an addiction psychiatrist with expertise in adolescent opioid use disorder treatment, suggests that "getting parents to focus on medication adherence" for their child is a critical component and sometimes one of the most important things that they can focus on.

Talking about the duration of treatment effectively

This is a major issue. Addiction medicine physicians almost uniformly agree that most adults with opioid use disorder will do best on medications for many years, and that improved functioning, not an artificial timeline, should guide the duration of care. When it comes to youth, the physicians agreed that because the duration of opioid use disorder is likely much shorter than for adults and opioid doses may be lower, that the duration of care may well be shorter, but, again, functioning should guide the duration of care.

However, telling a young person with opioid use disorder, and potentially their family, that they may be on medications for years or even the rest of their life may not accurately reflect their needs and may discourage them from even starting medications. In this instance, a focus on the mid-term, stabilization over a period of months and then a re-evaluation of medications and functioning, may be appropriate.

On a National Institute on Drug Abuse webinar on opioid use disorder treatment for adolescence, Dr. Geetha Subramaniam (June 21, 2017) stated her goal of keeping youth on medications for at least one year as a starting place for a conversation.

Nearly every physician interviewed stated that long-term, if not indefinite, treatment is needed to treat OUD. It is a "chronic disease" and needs to be treated as such, was the refrain of many healthcare providers. Patients need to understand that most people who stop medications relapse onto opioids and that their risk for overdose is high. This perspective was echoed by a physician with a long history of treating OUD in adults, who said: "Many think that if they could just stop using opioids they'll be ok, but … they don't realize their addiction is to other drugs [as well]. So they stop using opioids, but they find it's harder to stop other things than they thought it would be." This physician observed that, "Often we lose half the people" to dropout. The issue of retention is an important one to be discussed openly and reinforced through monitoring and perhaps, too, through a patient navigator who works with the patient before, during, and potentially after treatment.

Treat OUD as the disease that it is; address stigma

There was some degree of coalescence around the need to treat OUD "as the chronic disease that it is," in the words of two physicians. There is a need to destigmatize the illness and have a better understanding of MOUD and how it works. This is needed among providers and counselors, and also among youth and parents and support persons.

More integrated care and interdisciplinary teams

Several physicians emphasized the need for multidisciplinary teams. One MD said having multidisciplinary teams would be helpful. He said what's needed is, "More collaboration with pediatricians and with adolescent medicine practitioners. We need to increase the number of those in adolescent world….They can teach us [working] in the adult world." In conversation with an adolescent medicine provider, this adult medicine provider asked for help in how to work well with families of young adults, something that has emerged as a prevalent and difficult issue in their practice.

Ideally, we should move toward a situation where we are securing full family support and understanding that it is a chronic condition (like obesity) that could remain an area of stress throughout a person's life.

Other MDs used similar analogies, calling OUD similar to diabetes, a disease you would not question ongoing treatment for.

One CDP said he thinks physicians don't quite understand what getting off an opioid is like. Most people don't know that it takes longer. He thinks people experience it for 10 days and complain about it for 30 days. But the withdrawal can, in fact, take "as long as 15 days."

Training for counselors

Counselor training for those working with OUD is needed to correct misconceptions about the unique nature of opioids and their impact. One program manager working on the counselor side said, "A lot of people working in this field" have gotten into this field through "abstinence-based treatment and abstinence-based support." Knowledge of MOUD remains limited, especially among CDPs, and this needs to be remedied. However, it is also true that more needs to be understood about MOUD use in youth. Adult addiction specialists express some hesitation because the evidence base is not there, however the youth OUD specialists indicate they are comfortable with the use of buprenorphine and naltrexone with youth based on the positive clinical trial with youth, the clear evidence in research with adults, and their extensive clinical experience.

Providers are usually CDPs or LMHAs (Licensed Mental Health Associates) who may have been trained in manualized treatment not specific to the treatment of youth. It does not take account of their reading level, identity and family issues, or housing situations. There is high turnover among these providers. One long-term counselor described the heavy load on CDPs as follows: "They have extra case management: So many of them are so overworked and understaffed. There is constant turnover. A lot of times providers are using CDP interns…There is a huge training piece that is ongoing."

Connect pediatricians to youth treatment agencies

A lot of treatment is being done in very small agencies. Larger institutions don't meet the needs for youth/adolescents. There is adult treatment for OUD, but not youth. While there is much talk about buprenorphine, "smaller providers they aren't on board with it. They don't know enough about it and they don't understand how that could be incorporated into what they're doing," said a CDP.

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Conflicts of interest

The authors report no conflicts of interest including no previous or current funding from pharmaceutical manufacturers.

Citation

Banta-Green CJ, Cooley L. The Role of Medications in the Treatment of Adolescents and Young Adults with Opioid Use Disorder. Seattle, WA: Alcohol & Drug Abuse Institute, University of Washington, November 2018, 29p. URL: http://adai.uw.edu/pubs/pdf/2018MedicationsTreatmentYouthOUD.pdf

This report was produced under contract for the Washington State Division of Behavioral Health and Recovery; the findings and opinions are those of the authors and not WA DBHR.