

**Medication-Assisted Treatment and Other Behavioral
Interventions for Opioid Use Disorder:
Evidence, Guidelines, Policies, and Service Delivery Models**

Rapid Review

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Overview

Policymakers, public and private payers, providers, patients, and other relevant stakeholders are interested in the effectiveness and harms of behavioral treatments for opioid use disorder (OUD) and whether these vary by patient- or treatment-related factors. Center for Evidence-based Policy (Center) researchers searched bibliographic databases and conducted a general internet search to identify evidence, clinical practice guidelines, and policies for this review.

Methodological quality of randomized controlled trials (RCTs) and clinical practice guidelines were assessed using forms developed and adapted by the Center from several renowned and respected organizations; methodological quality was rated as good, fair, or poor.

Center researchers identified 6 RCTs, all of poor methodological quality, covering 5 categories of behavioral interventions, 5 clinical practice guidelines, and 3 service delivery models that address the use of behavioral interventions in conjunction with medications for OUD. Interviews were conducted with key informants who developed and implemented the service delivery models.

Key Findings

Interventions Identified Through RCTs

- No included studies identified significant harms related to any of the studied interventions.
- Included RCTs compared groups of individuals on a maintenance dose of a medication for OUD (e.g., methadone) randomized to different types or intensities of counseling and psychosocial interventions. While participants generally had significant improvements in outcomes related to OUD from baseline measures to the end of the trial, the differences between the intervention and comparator groups were not significantly different. This suggests there is little evidence supporting an additional benefit of counseling or psychosocial interventions (of the types

that have been studied) when appropriate pharmacotherapy is provided. However, the body of evidence includes studies of poor methodological quality with small sample sizes and large loss to follow-up.

Cognitive Behavioral Therapy

- Two RCTs, both of poor methodological quality, evaluated forms of cognitive behavioral therapy (CBT) in patients maintained on buprenorphine-naloxone (Suboxone) or methadone for OUD.
 - One RCT (N = 141) used CBT in addition to physician management and found no statistically significant differences in abstinence from opioids or retention in treatment when compared to physician management alone. However, a secondary analysis found those that primarily used prescription opioids and received CBT were significantly more likely to remain abstinent from any drug use ($P = .04$).
 - The second RCT (N = 78) used a form of CBT that addressed internal cues (e.g., emotions) by exposure to those cues and compared it to drug counseling. No statistically significant differences in drug use, addiction severity, or anxiety were identified.

Employment-focused Counseling

- A small RCT (N = 23) of poor methodological quality in participants in methadone maintenance and unemployed or working fewer than 10 hours per week tested an employment-focused counseling intervention to prepare participants for finding and remaining in employment.
 - No statistically significant differences in rates of employment, average monthly income, retention in treatment, opioid use, or HIV risk behaviors were identified.

Motivational Interviewing

- A study of poor methodological quality (N = 256) enrolled participants receiving methadone maintenance and tested 3 sessions of individual or group motivational

interviewing against a control of nurse-led hepatitis health promotion.

- No statistically significant differences were seen 6 months after study initiation between the motivational interviewing groups and the control group for daily drug use.

Online Modules

- A 12-week study (N = 170) of poor methodological quality included participants stabilized on Suboxone, and examined an in-clinic online intervention grounded in the community reinforcement approach compared to treatment as usual (TAU), which included contingency management and mandatory in-person counseling. The online intervention included 69 modules prescribed in a specific order based on evaluation by the therapist.
 - Outcomes related to total days abstinent ($P = .01$) and treatment completion ($P = .02$) were statistically significant.
- Participants who had previously received OUD treatment were more likely to have more total days of abstinence and complete treatment than those who had never attempted OUD treatment.

Videoconference-delivered Counseling

- An RCT (N = 85) of poor methodological quality in persons maintained on Suboxone assessed 15 sessions of individualized counseling in a video-based format against sessions attended in-person.
 - No between-group differences were found for drug-positive urine screen, rates of attendance, patient satisfaction with treatment, or therapeutic alliance.

Clinical Practice Guidelines

- Three identified guidelines recommend psychosocial interventions in conjunction with any medication used for OUD.
 - We rated the 2015 guideline from the American Society of Addiction Medicine as fair methodological quality.

- We rated the joint 2017 guideline from organizations in British Columbia as poor methodological quality.
- We rated the 2019 Canadian Patients, Experience, Evidence, Research (PEER) Group guideline as fair methodological quality.
- Two identified guidelines recommend psychosocial interventions in conjunction with any medication for OUD be made available, but not be a barrier to accessing medication treatment.
 - We rated the 2018 youth-focused supplement to the British Columbian guidelines as poor methodological quality.
 - We rated the 2019 Canadian Research Initiative in Substance Misuse as good methodological quality.

Policy Findings

- A 2018 Substance Abuse and Mental Health Services Administration (SAMHSA) report indicated Medicaid coverage policies in 15 states required psychosocial interventions when prescribing Suboxone. Utah Medicaid required psychosocial interventions if the prescription extended beyond 180 days.
- No private payer (commercial insurer) policies could be identified detailing counseling or other psychosocial intervention requirements in conjunction with medications for OUD.

Low-threshold Models and Approaches

Missouri

- Using a State Targeted Response (STR; now known as State Opioid Response [SOR]) grant, a medication first (MedFirst) approach to OUD has been created and provided in 14 treatment agencies operating 38 sites in the state.
- Nine statewide multidisciplinary events included presentations from practitioners (e.g., physicians, social workers) and patients who have experienced OUD, and were open to the public. Hundreds of smaller events by consulting physicians have been delivered following the initial rollout.

- Medications for OUD are provided to uninsured persons as quickly as possible, without arbitrary tapering or time limits, and without requirements to accept counseling or other psychosocial services.
- 86% of clients on the MedFirst approach receive OUD medications compared to 40% on more traditional treatment paths.

Virginia

- In 2017, Virginia amended its Medicaid substance use disorder (SUD) benefit by removing barriers such as prior authorization for Suboxone film up to 24 mg and allowing same-day access to pharmacotherapy treatments.
- Beneficiaries are not required to accept ongoing counseling or psychotherapy as a condition of receiving pharmacotherapy treatment.
- Virginia Medicaid officials worked with stakeholders to determine what barriers exist and what solutions would work to improve delivery of OUD medication without counseling.
- State Medicaid officials suggest reframing the question to ask why you would not provide access to life-saving medication treatment for OUD without the requirement of counseling, given this is a common approach for other conditions such as diabetes and depression.

Veterans Affairs

- The Stepped Care for Opioid Use Disorder Train the Trainer (SCOUTT) Initiative was rolled out nationwide to 19 teams in August 2018.
- Veterans with an OUD can now access medications for OUD treatment outside of specialty substance use clinics.
- Veterans are not required to accept psychosocial interventions to receive medication.
- In the pilot studies, the number of waived prescribers and number of patients receiving medications for OUD have doubled in the first year.

This report found participants improved from baseline measures regardless of the type or intensity of behavioral intervention received, and in general, no significant differences were found between groups during the study period. Clinical practice guidelines and service delivery models have begun to shift their recommendations and approach to one where adequate medication for OUD is provided without requiring the client to enter and maintain ongoing psychosocial services. Service delivery models have also begun to expand access by implementing a “no wrong door” approach that allows treatment for OUD outside of traditional SUD services.



Background

The 2019 SAMHSA report on indicators for behavioral health conditions found 2.1 million Americans aged 12 or older had an OUD in the previous year.¹ OUD is most prevalent in males, non-Hispanic white people, those aged 18 to 44, and those without insurance.¹ The 2018 National Survey on Drug Use and Health estimated only 19.7% of those with an OUD received treatment, a decrease of nearly 10% from 2017.²

It has broadly been accepted that OUD is best treated with a combination of pharmacotherapy (e.g., opioid agonists) and behavioral health interventions (e.g., counseling), often referred to as medication-assisted treatment (MAT).³ The aim of combined use of pharmacotherapies and behavioral health interventions is to manage symptoms related to withdrawal and psychosocial needs including comorbid psychiatric disorders and the need for other social supports.^{3,4}

SAMHSA recognizes the role behavioral health interventions can play in the treatment of SUDs, including OUD.⁵ Counseling and more specialized psychotherapies aim to change behaviors, thoughts, emotions, and how people perceive and understand situations.⁵ SAMHSA also recognizes that mental health or other specialized counseling services may be of benefit to many people with an OUD.⁶ However, psychosocial treatment services, including counseling, should target an individual's needs and should not arbitrarily be required to receive OUD medication.⁶ Several recent systematic reviews examining psychosocial interventions in conjunction with medications for OUD have concluded these additional services generally do not provide additional benefit for those stabilized on appropriate medications.⁷⁻⁹

Behavioral health interventions for OUD can vary in many ways:

- Location (e.g., primary care clinic, inpatient setting)
- Duration (e.g., 12 weeks, 12 months)
- Intensity (e.g., 1 hour weekly, 3 hours weekly)
- Modality (e.g., in-person, online)

- Theoretical underpinning (e.g., contingency management, therapeutic alliance)

Patients' preferences and prior treatment experience could influence their choice of behavioral treatment. Other patient-related demographic factors (e.g., socioeconomic status, age) or treatment-related factors (e.g., ease of access, distance from the patient's home) could also influence the choice of behavioral treatment for OUD.

Policymakers, public and private payers, providers, patients, and other relevant stakeholders have interest in understanding the effectiveness and harms of behavioral treatments for OUD and whether these vary by patient- or treatment-related factors when added to opioid agonist treatment. Opioid agonists suppress craving and withdrawal symptoms related to OUD, and block the effects of other opioids.¹⁰ Opioid agonists include methadone and buprenorphine.¹⁰ Stakeholders are particularly interested in models of care considered to be low-threshold (e.g., do not require ongoing counseling to receive treatment).

Key Questions

1. What is the effectiveness of behavioral health interventions for the treatment of OUD in adults receiving opioid agonist therapy?
 - a. How does the effectiveness vary by patient-related factors (e.g., age, primary substance use)?
 - b. How does the effectiveness vary by treatment-related factors (e.g., duration, location, intensity, modality)?
2. What are the harms of behavioral health interventions for the treatment of OUD in adults receiving opioid agonist therapy?
 - a. How do the harms vary by patient-related factors (e.g., age, primary substance use)?
 - b. How do the harms vary by treatment-related factors (e.g., duration, location, intensity, modality)?

3. What are the clinical practice guideline recommendations on behavioral health interventions in OUD?
 - a. How do the recommendations vary by patient-related factors (e.g., age, primary substance use)?
 - b. How do the recommendations vary by treatment-related factors (e.g., duration, location, intensity, modality)?
 4. What are payer policy requirements for patients receiving opioid agonist therapy for OUD?
 5. What health service delivery models are available to treat these patients (e.g., health homes, housing first, “low-threshold” treatment programs), and how are these models structured and implemented?
- Health-related outcomes (e.g., levels of depression and anxiety)
 - Housing status
 - Quality of life
 - Functional status
 - Work or education status
 - Engagement in criminal activity
 - Measures of social engagement (e.g., relationship with children)
 - Views and preferences of people with OUD
 - Views and preferences of providers or payers of OUD services

Inclusion Criteria

Populations

- Adults with an OUD receiving opioid agonist therapy (i.e., methadone, buprenorphine with or without naloxone)

Interventions

- Behavioral treatment interventions for OUD (e.g., counseling, self-help groups, contingency management), with opioid agonist therapy

Comparators

- Another behavioral intervention with an opioid agonist therapy
- Different frequencies or intensities of the same behavioral intervention with an opioid agonist therapy
- Opioid agonist therapy alone (i.e., methadone, buprenorphine with or without naloxone)

Efficacy and Effectiveness Outcomes

- Measures of retention in care or access
- Opioid-use-related outcomes, including mortality, overdose, substance use
- Utilization of services (e.g., emergency department visits)

Harm Outcomes

- Any reported harms

Study Designs

- RCTs

Methods

We searched Medicaid Evidence-based Decisions Project (MED) clinical evidence sources (e.g., Ovid MEDLINE, Cochrane Library) to identify systematic reviews and RCTs published in the past 10 years evaluating medications for OUD where psychosocial interventions were provided to at least one group in the study. Reference lists of relevant systematic reviews were reviewed for studies of potential relevance, but the systematic reviews themselves are not included in the analysis.

We searched MED clinical practice guideline sources (e.g., Ovid MEDLINE) and targeted organizations (e.g., SAMHSA, U.S. Preventive Services Task Force) for clinical practice guidelines published since 2015. One Center researcher assessed the methodological quality of the RCTs and clinical practice guidelines included in this report and another reviewed these ratings. Full details about the search strategies, inclusion and exclusion criteria, and quality assessment can be found in Appendix A.

We conducted a search of MED policy sources to identify relevant policy briefs, national policy summaries, laws, regulations, and guidance. We searched for major private payer policies using the websites of Aetna, Cigna, Anthem, and UnitedHealthcare. Details of these searches are in Appendix A. We identified 3 models of service delivery of interest and interviewed key informants about these models. We interviewed state officials in Missouri and Virginia and other subject-matter experts in Missouri and Veterans Affairs (Appendix A).

Findings

Clinical Evidence

We identified 6 RCTs in 7 publications.¹¹⁻¹⁷ Two studies, in 3 publications, included participants stabilized on Suboxone,^{11,12,15} 3 studies included participants receiving methadone,^{13,14,17} and 1 study included participants receiving methadone or Suboxone.¹⁶ Studies were conducted in either a primary care clinic^{11,15} or methadone clinic.^{13,14,16,17} Study sizes ranged from 23 to 256 participants with females making up 26% to 56% of participants and non-white ethnicities ranging from 4% to 81% of the study population.¹¹⁻¹⁷

Interventions included CBT,^{12,15,17} employment-focused counseling,¹⁴ motivational interviewing,¹³ online modules completed in the clinic,¹¹ and videoconference-delivered counseling.¹⁶ Study periods, including any follow-up, ranged from 12 weeks to 9 months.¹¹⁻¹⁷ Five studies measured abstinence from drug use with a urine drug screen or other toxicology test.^{11,12,14-17} Additional reported outcomes included retention in treatment, employment, and other psychosocial measures (e.g., anxiety).

Table 1 provides characteristics of the individual studies. We did not identify any outcomes related to harms from behavioral interventions, or lack thereof, in conjunction with medications for OUD in the included studies. None of the included studies measured events related to overdose or mortality.

All studies were rated as having poor methodological quality. The main reasons for

rating studies as poor methodological quality was high attrition (loss to follow-up), unclear methods (e.g., limited details on randomization and assessment), and unbalanced groups.

The well-known Prescription Opioid Addiction Treatment Study (POATS)¹⁸ has not been included in our review. Participants of POATS were randomized before starting and being stabilized on a medication for OUD¹⁸; thus, the population was not eligible for this report, which required stabilization prior to randomization. Another frequently cited study by Marsch et al. (2014), which replaced some traditional counseling sessions with a web-based intervention in a population receiving methadone, was also not included because participants in the trial were stabilized on methadone during the first 14 days.¹

Interventions

Table 2 provides details (e.g., means, confidence intervals) on the relevant outcomes reported in each trial.

CBT

Two studies of poor methodological quality evaluated CBT interventions.^{12,15,17} Fiellin et al. compared physician management with CBT to physician management alone in Suboxone stabilized participants (N =141) over 24 weeks.¹⁵ During the first 12 weeks, the treatment group received up to 12 weekly sessions of 50 minutes each covering topics on behavior, coping skills, decision making, and problem solving.¹⁵

Both groups received up to 8 physician management sessions of 15 to 20 minutes per session that included a review of recent drug use and toxicology results, other medical and psychiatric symptoms, and brief advice on how to achieve and maintain abstinence.¹⁵ A majority of participants were male (74%) and white (90%), with 65% having prior SUD treatment.¹⁵

No significant differences were seen between the groups for abstinence based on self-reported opioid use and opioid-negative urine drug screen or in treatment retention (Table 2).¹⁵ However, a

Table 1. Characteristics of Included RCTs by Intervention

| Author (Year) State Study Quality | Setting N Study Period Inclusion Criteria | Intervention(s) | Comparator | Outcomes |
|---|--|---|--|--|
| CBT | | | | |
| Fiellin et al., 2013 ^{12,15} Connecticut Poor | <ul style="list-style-type: none"> Primary care clinic N = 141 26 weeks <u>Inclusion criteria:</u> <ul style="list-style-type: none"> Stabilized on Suboxone | Physician management + CBT <ul style="list-style-type: none"> Up to 12 weekly sessions, 50 minutes each | Physician management only <ul style="list-style-type: none"> Up to 12 weekly sessions, 15 to 20 minutes each | <ul style="list-style-type: none"> Abstinence via UDS Retention in treatment Self-report illicit drug use |
| Otto et al., 2014 ¹⁷ Massachusetts Poor | <ul style="list-style-type: none"> Methadone clinic N = 78 5 months <u>Inclusion criteria:</u> <ul style="list-style-type: none"> Receiving methadone ≥ 2 weeks Unsuccessful completion of TAU Current chronic stressor (e.g., unemployment) or affective disorder (e.g., anxiety) | TAU + CBT-IC (internal cues) <ul style="list-style-type: none"> 12 weekly sessions, 60 minutes each 3 booster sessions at 2 weeks, 1 month, and 2 months after the weekly sessions TAU: mandatory weekly group counseling | TAU + individual drug counseling (akin to 12-step program) <ul style="list-style-type: none"> 12 weekly sessions, 60 minutes each 3 booster sessions at 2 weeks, 1 month, and 2 months after the weekly sessions | <ul style="list-style-type: none"> Addiction Severity Index Anxiety Sensitivity Index Toxicology screening via swab |
| Employment-focused Counseling | | | | |
| Coviello et al., 2009 ¹⁴ Pennsylvania Poor | <ul style="list-style-type: none"> Methadone clinic N = 23 6 months <u>Inclusion criteria:</u> <ul style="list-style-type: none"> In methadone maintenance Unemployed or underemployed (≤ 10 hours per week) Able or interested in working | Employment-focused counseling <ul style="list-style-type: none"> Up to 26 weeks of preparatory and post-employment individual counseling sessions, 45 minutes each | Individual drug counseling <ul style="list-style-type: none"> Up to 26 weekly sessions, 45 minutes each | <ul style="list-style-type: none"> Abstinence via UDS Employment HIV risk via Risk Assessment Battery Monthly income Retention in treatment |

Table 1. Characteristics of Included RCTs by Intervention (*continued*)

| Author (Year) State Study Quality | Setting N Study Period Inclusion Criteria | Intervention(s) | Comparator | Outcomes |
|--|--|---|--|--|
| Motivational Interviewing | | | | |
| Nyamathi et al., 2010 ¹³ California Poor | <ul style="list-style-type: none"> • Methadone clinic • N = 256 • 9 months <u>Inclusion criteria:</u> <ul style="list-style-type: none"> • Receiving methadone ≥ 3 months • Moderate-to-severe alcohol use | Motivational interviewing <ul style="list-style-type: none"> • Individual or group motivational interviewing • 3 sessions over 6 weeks, 60 minutes each | Nurse-led hepatitis health promotion <ul style="list-style-type: none"> • 3 sessions over 6 weeks, 60 minutes each | <ul style="list-style-type: none"> • Addiction Severity Index - Lite |
| Online Modules | | | | |
| Christensen et al., 2014 ¹¹ Arkansas Poor | <ul style="list-style-type: none"> • Primary care clinic • N = 170 • 12 weeks <u>Inclusion criteria:</u> <ul style="list-style-type: none"> • Stabilized on Suboxone | Web-based modules completed in clinic + contingency management + TAU <ul style="list-style-type: none"> • 3 sessions per week, with each module lasting 30 minutes | Contingency management + TAU <ul style="list-style-type: none"> • Contingency management up to ~\$1,000 in vouchers for negative UDS • TAU: 30 minute counseling session every 2 weeks | <ul style="list-style-type: none"> • Abstinence via UDS • Addiction Severity Index • Retention in treatment |
| Videoconference-delivered Counseling | | | | |
| King et al., 2014 ¹⁶ Maryland Poor | <ul style="list-style-type: none"> • Community opioid treatment program • N = 85 • 6 months <u>Inclusion criteria:</u> <ul style="list-style-type: none"> • Receiving methadone, Suboxone, or naltrexone • Drug abstinent and counseling adherent for previous 30 days • Access to a computer and the internet | eGetgoing (web-based videoconference) <ul style="list-style-type: none"> • 12 weekly sessions, 1 hour each | In-person counseling <ul style="list-style-type: none"> • 12 weekly sessions, 30 to 40 minutes each | <ul style="list-style-type: none"> • Abstinence via UDS • Helping Alliance Questionnaire II • Retention in treatment • Satisfaction with treatment |

Abbreviations. CBT: cognitive behavioral therapy; RCT: randomized controlled trial; TAU: treatment as usual; UDS: urine drug screen.

secondary analysis stratified by primary opioid use (e.g., prescription opioids vs illicit opioids) was conducted by Moore et al. and found statistically significant differences between those who primarily used prescription opioids ($n = 48$) and those who used heroin ($n = 93$).¹² For those who primarily used prescription opioids, there was a statistically significant between group difference in number of weeks abstinent from any drug as measured by urine drug screen ($P = .04$); see Table 2.¹²

A 2014 study of 78 individuals receiving methadone for at least 2 weeks examined CBT for interoceptive cues (CBT-IC) compared to individual drug counseling.¹⁷ All participants continued to receive TAU, which included mandatory attendance at weekly group counseling sessions.¹⁷ Participants were eligible for this study if they had previously been unsuccessful at completing TAU (e.g., did not qualify for take-home methadone, had more than 2 positive drug urine screens in 2 months).¹⁷ The majority of participants were white (68%), had at least 1 comorbid mood disorder (91%), and at least 1 comorbid SUD (86%).¹⁷

CBT-IC is a form of CBT that attempts to enhance resilience to internal cues (i.e., emotional state, withdrawal symptoms) through exposure to those cues.¹⁷ Participants received 12 weekly hour-long sessions and 3 booster sessions at various intervals.¹⁷ There were no statistically significant differences between groups for toxicology by oral swab, addiction severity, or changes to levels of anxiety (Table 2).¹⁷

Employment-focused Counseling

In a small RCT ($N = 23$), of poor methodological quality, Coviello et al. used interpersonal cognitive problem solving in an integrated counseling intervention to prepare participants in methadone maintenance who were unemployed or working less than 10 hours per week, to be able to find and remain in employment.¹⁴ Participants could receive up to 14 weeks of weekly pre-employment preparatory counseling and 12 weeks post-employment counseling, or drug counseling only.¹⁴ All sessions were 45 minutes.¹⁴ The counseling

sessions could focus on drug use, employment, or both depending on the needs of the client as assessed by the counselor at each session.¹⁴ Assessments evaluated potential problem areas such as drug use, employment, methadone dose, or psychosocial factors.¹⁴

Topics covered during the preparatory phase could include barriers to employment and recovery, identifying resources, and developing an action plan.¹⁴ Once the participant found employment, they entered the post-employment counseling phase, which aimed to identify problems that may impede remaining in employment, such as transportation, budgeting, and accessing take-home doses of methadone.¹⁴

Data for 17 participants (10 in the intervention and 7 in the control) were collected at 6 months. The authors found differences between baseline and 6 month outcomes within the groups, but there were no differences between groups (Table 2)¹⁴:

- Rates of employment, defined as having worked at least 1 day in the 30 days before the follow-up interview
- Average monthly income
- Retention in treatment
- Opioid use in previous 30 days as tested with a urine drug screen
- HIV risk behaviors as measured with the Risk Assessment Battery

Motivational Interviewing

A poor methodological quality RCT of participants receiving methadone maintenance for at least 3 months ($N = 256$) with concurrent moderate-to-heavy alcohol use compared either group ($n = 79$) or individual ($n = 90$) motivational interviewing to a nurse-led hepatitis health promotion ($n = 87$).¹³ Three sessions of 60 minutes each were provided over a 6-week period.¹³ The motivational interview sessions covered the dangers of alcohol use on hepatitis, improving healthy behaviors (e.g., reducing drug use, improving diet), social support, and self-esteem while the nurse-led sessions covered hepatitis health promotion only.²⁰

Participants were mostly non-white (81%), male (59%), and unemployed (83%).¹³

Six months after baseline assessment, average daily drug use was measured with the Addiction Severity Index – Lite Version.¹³ Participants were asked to recall drug use in the previous 30 days and previous 6 months. There were no statistically significant differences between the 2 motivational interview treatment groups and the nurse-led control group (Table 2).¹³ However, at an individual patient level, 30-day recall for both motivational interview groups was statistically significant compared to the nurse-led control group ($P < .005$); see Table 2.¹³

Online Modules

Christensen et al. conducted a 12-week study of Suboxone stabilized participants (N=170) using an add-on online training intervention grounded in the community reinforcement approach.¹¹ Nearly all participants were white (95%), 54% were male, and 46% had prior treatment for OUD.¹¹ The training consisted of 69 modules (e.g., self-management planning, drug-refusal training) completed in the order prescribed by the therapist.¹¹ Completing the modules required visiting the clinic 3 times per week for approximately 30 minutes per session.¹¹ Participants also received 30-minute counseling sessions every 2 weeks and contingency management with the ability to earn nearly \$1,000 in vouchers for negative urine drug screens.¹¹ Participants in the control group only received these counseling sessions and contingency management with the ability to earn vouchers.

Abstinence was measured with a urine drug screen. Total days abstinent during the study period was statistically significant between groups ($P = .01$); Table 2.¹¹ This was also true in those who had received prior OUD treatment ($P = .001$), but did not hold for OUD treatment-naïve participants ($P = .56$); see Table 2.¹¹

Participants in the treatment group were 26% more likely to complete treatment than those in the control group (Table 2).¹¹ Those who had prior OUD treatment ($n = 78$) were 57% more likely to complete treatment than those who were treatment naïve ($n = 92$); see Table 2.¹¹

Addiction severity, measured with the Addiction Severity Index, was not significantly different between groups at 6- or 12-weeks ($P = .24$); see Table 2.¹¹

Videoconference-delivered Counseling

A 2014 study of poor methodological quality evaluated an online videoconference-based counseling intervention, known as eGetgoing, compared to in-person counseling; all counseling sessions were individualized to the patient's needs.¹⁶ The vast majority of participants were receiving methadone (57 of 59) with 1 participant each receiving Suboxone and naltrexone.¹⁶ Just over half the participants were female (56%) and a majority were white (73%).¹⁶ After 85 participants were randomized, more than half of the eGetgoing group dropped out of the trial (26 of 50) before starting the intervention.¹⁶ All participants received weekly counseling for 12 weeks and were followed up monthly for 3 months.¹⁶

No between-group differences were found for (Table 2)¹⁶:

- A drug-positive urine drug screen ($P = .83$)
- Rates of overall attendance ($P = .17$)
- Patient satisfaction with the treatment ($P = .21$)

The study also measured therapeutic alliance with the Helping Alliance Questionnaire II, completed separately by the participant and therapist; no differences were found between participant ($P = .91$) or therapist ratings ($P = .49$).¹⁶

Table 2. Characteristics of Included RCTs by Intervention

| Author (Year) State Study Quality | Setting N Study Period | Intervention (n) vs Comparator (n) Outcomes |
|---|--|---|
| CBT | | |
| Fiellin et al., 2013 ^{12,15} Connecticut Poor | <ul style="list-style-type: none"> • Primary care clinic • N = 141 • 26 weeks | <p>Physician management + CBT (n = 70) vs physician management only (n = 71)</p> <p><u>Self-reported opioid use</u></p> <ul style="list-style-type: none"> • No significant difference • Baseline: 5.3 days/week, 95% CI, 5.1 to 5.5 vs 26 weeks: 0.4 days, 95% CI, 0.1 to 0.6; P = .96 <p><u>Abstinence via UDS for opioid use</u></p> <ul style="list-style-type: none"> • No significant difference • Reported in figure only; P = .84 <p><u>Retention in treatment</u></p> <ul style="list-style-type: none"> • No significant difference • Reported in figure only; P = .46 <p>By primary opioid use</p> <p><u>Retention in treatment</u></p> <ul style="list-style-type: none"> • No significant difference • Primary Rx opioid: CBT 14/26 (54%) vs Physician management 11/23 (48%) • Heroin: CBT: 20/44 (43%) vs Physician management: 20/47 (44%) • Primary opioid use groups, P = .72 <p><u>Abstinence via UDS for any drug</u></p> <ul style="list-style-type: none"> • Statistically significant in primary Rx opioid users • Primary Rx opioid: CBT 7.6 weeks, SD = 7.9 vs Physician management 3.7 weeks, SD = 5.4; P = .04 • Heroin: CBT 5.1 weeks, SD = 6.5 vs Physician management 6.4 weeks, SD = 7.0 • Primary opioid use groups, P = .28 |

Table 2. Characteristics of Included RCTs by Intervention (*continued*)

| Author (Year) State Study Quality | Setting N Study Period | Intervention (n) vs Comparator (n) Outcomes |
|---|--|--|
| Otto et al., 2014 ¹⁷ Massachusetts Poor | <ul style="list-style-type: none"> • Methadone clinic • N = 78 • 5 months | <p>TAU + CBT-IC (internal cues) (n = 41) vs TAU + individual drug counseling (n = 37)</p> <p><u>Addiction Severity Index</u></p> <ul style="list-style-type: none"> • No significant difference • No detailed statistics reported; Treatment Group $P = .89$; Gender $P = .3$; Gender by Time $P = .96$; Treatment Group by Time $P = .65$ <p><u>Toxicology screening by swab</u></p> <ul style="list-style-type: none"> • No significant difference • Reported in graph only; Time $P = .31$; Treatment Group $P = .53$; Gender $P = .80$ <p><u>Anxiety Sensitivity Index</u></p> <ul style="list-style-type: none"> • No significant difference • No detailed statistics reported; Treatment Group $P = .83$; Gender $P = .57$ |
| Employment-focused Counseling | | |
| Coviello et al., 2009 ¹⁴ Pennsylvania Poor | <ul style="list-style-type: none"> • Methadone clinic • N = 23 • 6 months | <p>Employment-focused counseling (n = 12) vs Individual drug counseling (IDC) (n = 11)</p> <p><u>Rates of employment (at 6 months)</u></p> <ul style="list-style-type: none"> • No significant difference • Employment: 50% (5/10) vs IDC: 71% (5/7) • Overall 59%; $P < .05$ <p><u>Average monthly income (at 6 months)</u></p> <ul style="list-style-type: none"> • No significant difference • Employment: \$235 vs IDC: \$540 • Overall Mean = \$361; $P < .05$ <p><u>Retention in treatment (at 6 months)</u></p> <ul style="list-style-type: none"> • No significant difference • Employment: 77% (10/13) vs IDC: 70% (7/10); $P = .28$ <p><u>Past 30 day opioid use (at 6 months)</u></p> <ul style="list-style-type: none"> • No significant difference • Employment: 1.1 days vs CG: 0.43 days • Overall 0.82 days; $P = \text{NR}$ <p><u>HIV risk (Risk Assessment Battery, at 6 months)</u></p> <ul style="list-style-type: none"> • No significant difference • Employment: 2.4 (of 40) vs IDC: 4.4 (of 40) • Overall group mean sum score, 3.1 (of 40); $P < .05$ |

Table 2. Characteristics of Included RCTs by Intervention (*continued*)

| Author (Year) State Study Quality | Setting N Study Period | Intervention (n) vs Comparator (n) Outcomes |
|--|--|---|
| Motivational Interviewing | | |
| Nyamathi et al., 2010 ¹³ California Poor | <ul style="list-style-type: none"> • Methadone clinic • N = 256 • 9 months | <p>Motivational interviewing (individual n = 90 or group n = 79) vs Nurse-led hepatitis health promotion (NHHP) (n = 87)</p> <p><u>Drug use using Addiction Severity Index – Lite Version (at 6 months), between groups</u></p> <ul style="list-style-type: none"> • No significant difference • Average change in daily drug use since baseline, 6 months recall: MI-I Mean = 0.33, SE = 0.18 vs MI-G Mean = 0.04, SE = 0.17 vs NHHP Mean = 0.12, SE = 0.16 <p><u>Drug use using Addiction Severity Index – Lite Version (at 6 months), individual patient level</u></p> <ul style="list-style-type: none"> • Statistically significant in motivational interview groups • Average change in daily drug use since baseline, 30-day recall: MI-I Mean 0.93, SE = 0.32 vs MI-G Mean = 1.07, SE = 0.38 vs NHHP Mean = 0.35, SE 0.32; $P < .005$. |
| Online Modules | | |
| Christensen et al., 2014 ¹¹ Arkansas Poor | <ul style="list-style-type: none"> • Primary care clinic • N = 170 • 12 weeks | <p>Web-based modules completed in clinic + contingency management + TAU (n = 92) vs Contingency management + TAU (n = 78)</p> <p><u>Abstinence via UDS</u></p> <ul style="list-style-type: none"> • Statistically significant for online modules. Overall: Modules 67.1 days, SD = 19.3 vs CG 57.4 days, SD = 28.0; $P = .01$ • Statistically significant for prior OUD treatment: Modules: 72.6 days, SD = 11.4 vs CG 54.8 days, SD = 28.3; $P = .001$ • No significant difference for treatment-naïve: Modules 63.4 days, SD = 22.5 vs CG 60.1 days, SD = 27.7; $P = .56$ <p><u>Completed treatment</u></p> <ul style="list-style-type: none"> • Statistically significant for online modules. Overall: Modules: 80.4% (74/92) vs CG: 64.1% (50/78), RR = 1.26, 95% CI 1.03 to 1.52; $P = .02$ • Statistically significant for prior OUD treatment: Modules 91.9% (34/37) vs CG 58.5% (24/41), RR = 1.57, 95% CI 1.19 to 2.07; $P = .001$ • No significant difference for treatment-naïve: Modules 72.7% (40/55) vs CG 70.3% (26/37), RR = 1.04, 95% CI 0.79 to 1.35; $P = .80$ <p><u>Addiction Severity Index</u></p> <ul style="list-style-type: none"> • No significant difference • Composite score across time, between groups: No statistical detail reported; $P = .24$ |

Table 2. Characteristics of Included RCTs by Intervention (*continued*)

| Author (Year) State Study Quality | Setting N Study Period | Intervention (n) vs Comparator (n) Outcomes |
|---|--|--|
| Videoconference-delivered Counseling | | |
| King et al., 2014 ¹⁶ Maryland Poor | <ul style="list-style-type: none"> Community opioid treatment program N = 85 6 months | <p>eGetgoing (web-based videoconference) vs In-person counseling</p> <p><u>Positive drug screens via UDS</u></p> <ul style="list-style-type: none"> No significant difference eGetgoing: Mean = 11%, SD = 0.27 vs in-person: Mean = 9%, SD = 0.16; $P = .83$ <p><u>Attendance</u></p> <ul style="list-style-type: none"> No significant difference eGetgoing: Mean = 7.3 sessions, SD = 2.49 vs in-person: Mean = 6.1 sessions, SD = 3.30; $P = .17$ <p><u>Satisfaction with treatment (Client Satisfaction Questionnaire)</u></p> <ul style="list-style-type: none"> No significant difference eGetgoing: Mean = 3.8, SD = 0.31 vs in-person: Mean = 3.6, SD = 0.52; $P = .21$ <p><u>Helping Alliance Questionnaire II (quality of therapeutic alliance)</u></p> <ul style="list-style-type: none"> No significant differences Patient-rated: eGetgoing: Mean = 5.4, SD = 0.7 vs in-person: Mean = 5.4, SD = 0.48; $P = .91$ Therapist-rated: eGetgoing: Mean = 5.2, SD = 0.5 vs in-person: Mean = 5.1, SD = 0.4; $P = .49$ |

Abbreviations. CBT: cognitive behavioral therapy; CI: confidence interval; IDC: individual drug counseling; MI-G: motivational interviewing-group; MI-I: motivational interviewing-individual; NHHP: nurse-led hepatitis health promotion; NR: not reported; RR: risk ratio; Rx: prescription; SD: standard deviation; SE: standard error; TAU: treatment as usual; UDS: urine drug screen.

Table 3. Psychosocial Intervention Recommendations from Clinical Practice Guidelines

| Organization Year | Psychosocial Intervention Recommendation | Methodological Quality | Quality of Evidence Rating System |
|--|--|---------------------------|---|
| Mandatory Counseling | | | |
| American Society of Addiction Medicine ²¹ 2015 | <ul style="list-style-type: none"> Recommended in conjunction with any pharmacological (e.g., methadone, buprenorphine) treatment of OUD. | Fair | No grading of evidence or recommendations |
| British Columbia Ministry of Health and British Columbia Centre on Substance Use ²² 2017 | <ul style="list-style-type: none"> Interventions and supports should be routinely offered in conjunction with pharmacological treatment. | Poor | GRADE |

Table 3. Psychosocial Intervention Recommendations from Clinical Practice Guidelines (*continued*)

| Organization Year | Psychosocial Intervention Recommendation | Methodological Quality | Quality of Evidence Rating System |
|---|--|---------------------------|---|
| PEER (Patients, Experience, Evidence, Research) Group [Canada] ²⁴ 2019 | <ul style="list-style-type: none"> Recommend the addition of counseling to pharmacotherapy in patients with OUD, where available. | Fair | GRADE |
| Voluntary Counseling | | | |
| British Columbia Ministry of Health and British Columbia Centre on Substance Use [Youth Supplement] ²⁵ 2018 | <ul style="list-style-type: none"> Interventions and support should be routinely offered to all youth with OUD but should not be a barrier into accessing care. | Poor | No grading of evidence or recommendations |
| CIHR Canadian Research Initiative in Substance Misuse ²³ 2018 | <ul style="list-style-type: none"> Interventions and supports should be routinely offered but should not be viewed as a mandatory requirement for accessing opioid agonist treatment. | Good | GRADE |

Abbreviations. CIHR: Canadian Institutes of Health Research; GRADE: Grading of Recommendations Assessment, Development and Evaluation; OUD: opioid use disorder.

Table 4. States with a Psychosocial Requirement for Buprenorphine or Buprenorphine-Naloxone

| State | Psychosocial Requirement? | Preferred Drug? | Prior Authorization Required? | Quantity and/or Dose Limits? |
|--|---------------------------|-----------------|-------------------------------|------------------------------|
| Buprenorphine-Naloxone (Suboxone) | | | | |
| Arkansas | Yes | Yes | Yes | Yes |
| Florida | Yes | Yes | Yes | Yes |
| Indiana | Yes | Yes | Yes | Yes |
| Iowa | Yes | Yes | Yes | Yes |
| Kentucky | Yes | Yes | Yes | Yes |
| Maine | Yes | Yes | Yes | Yes |
| Michigan | Yes | Yes | Yes | Yes |
| Montana | Yes | Yes | Yes | Yes |
| Nebraska | Yes | Yes | No | Yes |
| Nevada | Yes | Yes | Yes | Yes |
| New Hampshire | Yes | Yes | No | Yes |
| Ohio | Yes | Yes | Yes | Yes |
| Oregon ³² | Yes | Yes | Yes | Yes |

Table 4. States with a Psychosocial Requirement for Buprenorphine or Buprenorphine-Naloxone (continued)

| State | Psychosocial Requirement? | Preferred Drug? | Prior Authorization Required? | Quantity and/or Dose Limits? |
|--|---------------------------|-----------------|-------------------------------|------------------------------|
| Buprenorphine-Naloxone (Suboxone) | | | | |
| Pennsylvania | Yes | Yes | Yes | Yes |
| Tennessee | Yes | Yes | Yes | Yes |
| Utah | Yes ^a | Yes | No | Yes |
| Virginia | Yes ^b | Yes | Yes | Yes |

Note. ^aPsychosocial requirement and prior authorization only required for treatment beyond 180 days. ^bVirginia has removed prior authorization for Suboxone up to 24 mg and requires recording of referral to psychosocial treatment to be entered in the patient record to meet state requirements (Virginia Medicaid staff, personal communication). Source: Adapted from SAMHSA³¹ except where indicated.

Table 5. States with a Psychosocial Requirement for Other Formulations of Buprenorphine

| State | Psychosocial Requirement? | Preferred Drug? | Prior Authorization Required? | Quantity and/or Dose Limits? |
|--|---------------------------|-----------------|-------------------------------|------------------------------|
| Implantable Buprenorphine (Probuphine) | | | | |
| Kansas | Yes | No | Yes | Yes |
| Missouri | No | No | Yes | Yes |
| New Hampshire | Yes | No | Yes | Yes |
| New York | Yes | No | Yes | Yes |
| North Carolina | Yes | Unknown | Yes | Yes |
| Oregon ³² | Yes | Yes | Yes | Yes |
| Pennsylvania | Yes | No | Yes | Yes |
| Extended-Release Injectable Buprenorphine (Sublocade) | | | | |
| Colorado | Yes | No | Yes | Yes |
| Indiana | Yes | No | Yes | Yes |
| Maryland | Yes | No | Yes | Yes |
| Michigan | Yes | No | Yes | Yes |
| New Hampshire | Yes | No | Yes | Yes |
| New York | Yes | Yes | Yes | Yes |
| Oregon ³² | Yes | Yes | Yes | Yes |
| Pennsylvania | Yes | No | Yes | Yes |
| South Carolina | No | Yes | Yes | Yes |

Table 5. States with a Psychosocial Requirement for Other Formulations of Buprenorphine (*continued*)

| State | Psychosocial Requirement? | Preferred Drug? | Prior Authorization Required? | Quantity and/or Dose Limits? |
|-----------|---------------------------|-----------------|-------------------------------|------------------------------|
| Utah | Yes | No | Yes | Unknown |
| Virginia | Yes | No | Yes | Yes |
| Wisconsin | Yes | No | Yes | Unknown |

Source. Adapted from SAMHSA³¹ except where indicated.

Clinical Practice Guidelines

We identified 5 clinical practice guidelines published since 2015 for the treatment of OUD with reference to psychosocial interventions offered in conjunction to medications for OUD.²¹⁻²⁵ Only 1 clinical practice guideline was produced by a U.S. society²¹ with the remaining 4 produced by Canadian organizations.²²⁻²⁵ Three guidelines²²⁻²⁴ provide strength of recommendation and quality of evidence ratings for their recommendations; 2 guidelines do not provide strength of recommendation and quality of evidence ratings for their recommendations.^{21,25} We rated 1 guideline as good methodological quality because of generally clear and transparent methods of development of recommendation statements, including thorough systematic reviews of evidence, consensus building by committee members, and a range of professional and layperson involvement in the development and review of the recommendations.²³ We rated 2 guidelines as fair methodological quality because of lack of transparency for some methods of development, lack of detail for implementation and management, and inconsistency with current evidence.^{21,24} We rated 2 guidelines as poor methodological quality because of lack of transparency of methods.^{22,25} Table 3 provides brief details of the guidelines included in this review.

The 2 oldest guidelines, one from the American Society of Addiction Medicine (2015)²¹ and a joint guideline from the British Columbia Ministry of Health and the British Columbia Centre on Substance Use (BCCSU; 2017),²² recommend psychosocial interventions in conjunction with pharmacological treatment. However, the youth

supplement of the British Columbia guideline (2018) states that psychosocial interventions should be routinely offered, but should not be a barrier to accessing care.²⁵ This is in line with the 2018 Canadian Research Initiative in Substance Misuse (CRISM) guideline, which states psychosocial interventions should not be mandatory to access opioid agonist therapy.²³ The Canadian PEER (Patients, Experience, Evidence, Research) Group's guideline (2019) is more ambiguous as it recommends the use of counseling "where available" in patients accessing pharmacotherapy.²⁴ It should be noted the more recent guidelines from BCCSU, CRISM, and the PEER Group align with the 2009 World Health Organization guidelines, which state patients should be offered psychosocial support but not denied agonist therapy if they refuse psychosocial support.²⁶

Policy Findings

Federal Policy

U.S. federal opioid treatment standards require substance use, HIV, vocational, and educational counseling services be available to people receiving pharmaceutical treatments for OUD.^{27,28} However, there is a well-developed expectation in practice that counseling is a required service. Additionally, states may have their own laws requiring counseling with methadone treatment.²⁹ The Substance Use-Disorder Prevention that Promotes Opioid Recovery and Treatment for Patients and Communities Act (SUPPORT Act) became law in October 2018, and goes into effect January 1, 2020.³⁰ The SUPPORT Act will allow Medicare providers to bundle payments for OUD treatment services that include opioid

agonist (e.g., buprenorphine) and antagonist (e.g., naltrexone) medications, the dispensing and administration of those medications, substance use counseling, individual and group therapy, and toxicology screening.³⁰

State Policy

A 2018 SAMHSA report reviewed state Medicaid coverage of MAT for OUD including requirements for psychosocial interventions. The data used in the report come from pharmacy and behavioral health documents available on state Medicaid agency websites during the second and third quarters of 2018.³¹

During this period, SAMHSA identified 16 state agencies that explicitly listed a psychosocial requirement when prescribing Suboxone (Table 4).³¹

Private Payer Policies

We identified no private payer (commercial insurer) policies detailing counseling or other psychosocial intervention requirements in conjunction with medications for OUD. However, from 2016 to 2018, 4 private payers removed prior authorization for some formulations of buprenorphine or buprenorphine-naloxone products.³³⁻³⁶ This trend is also occurring in several states and territories including New Jersey,³⁷ Pennsylvania,³⁸ and Washington, D.C.³⁹

Low-threshold Models and Approaches

We identified 3 low-threshold models or approaches to OUD treatment. In 2018 Missouri, began providing uninsured individuals with medications for OUD using a medication-first approach, though this does not necessarily equal medication only. Virginia Medicaid enhanced their SUD benefit to prioritize MAT. A nationwide model was implemented by the Veterans Health Administration (VHA) and offers medications for OUD outside of specialty SUD clinics. All of these services are low-threshold and do not require clients to accept ongoing counseling to access medication.

We spoke to 2 representatives from each model or approach identified. Below we describe the

development, implementation, and lessons learned from each of these approaches. Appendix A provides details of whom we interviewed.

Missouri Medication First

In 2017, Missouri was awarded a 2-year SAMHSA opioid crisis STR grant to increase access to treatment for OUD. Missouri used the STR grant to prioritize access to evidence-based medications for OUD.⁴⁰

The Missouri Department of Mental Health (DMH) partnered with Dr. Rachel Winograd, a research professor from the University of Missouri, to lead the design and implementation of an approach that came to be known as Medication First, or MedFirst (personal communication).

Despite messaging from the DMH to utilize treatments such as buprenorphine, a review of the 2016 data found less than 40% of patients received any medication for OUD, and less than 5% of those received more than 5 buprenorphine prescriptions (Dr. Winograd, personal communication).

The DMH and Dr. Winograd wanted to create an incentive to increase access and use of buprenorphine instead of continuing underutilization of this treatment (personal communication). Because Missouri did not expand Medicaid under the Patient Protection and Affordable Care Act, state officials could not use Medicaid funding to create office-based opioid treatment (OBOT) services and had to find a different approach (Dr. Winograd, personal communication).

Dr. Winograd and colleagues used HousingFirst, an approach for chronic homelessness, as a template and developed 4 principles⁴⁰:

1. Clients receive pharmacotherapy as quickly as possible, prior to lengthy assessments or treatment planning sessions.
2. Maintenance pharmacotherapy is delivered without arbitrary tapering or time limits.
3. Individualized psychosocial services are offered but not required as a condition of pharmacotherapy.

4. Pharmacotherapy is not discontinued if a patient relapses.

Dr. Winograd and her colleagues launched the MedFirst framework by working with stakeholders including physicians, social workers, and people who use or are in recovery from substance use to develop a multidisciplinary training event, the Opioid Crisis Management Training.⁴⁰

The 9 Opioid Crisis Management Training events delivered across the state were open to the public and generally served more than 100 participants at each half-day session (Dr. Winograd, personal communication). The events included information on the components of MedFirst—medical, psychosocial, administrative, and peer support/harm reduction—followed by breakout sessions by discipline (e.g., physicians, administrators, social workers) and patient panels (Dr. Winograd, personal communication).

Hundreds of smaller events, disseminating the MedFirst approach to thousands of practitioners, have been delivered by consulting physicians at primary care practices throughout the state (Dr. Winograd, personal communication). During these events, the DMH made it clear that to access STR funds, treatment agencies would need to be pro-medication-first and would need to demonstrate willingness and competence to adhere to the MedFirst approach (Dr. Winograd, personal communication).

Treatment agencies seeking access to the STR funds had to complete an environmental scan that included a self-assessment of capacity to address the following issues (Dr. Winograd, personal communication):

- Access to medication (e.g., Can you provide same or next day access? What policies and procedures support or hinder this?)
- Pharmacy capacity (e.g., Do you have an onsite pharmacy or automatic dispensing machine?)
- Telehealth (e.g., Do you currently deliver or receive telehealth services?)

Twenty-five SUD treatment agencies, operating 190 sites across Missouri, were eligible to apply for funds starting in July 2017.⁴⁰ Within the first 18 months, 14 treatment agencies operating 38 sites were awarded STR grant funds.⁴⁰ Unfortunately the DMH has been limited in their ability to expand to more treatment agencies and sites due to limited funding (Dr. Winograd, personal communication).

The DMH did not allow STR funds to be used for services that lacked evidence demonstrating efficacy. These determinations were made between DMH and included interventions such as group therapy, group education, and social setting detoxification (Dr. Winograd, personal communication). This decision had, and continues to have, large fiscal consequences for some treatment agencies because group-based services generated a large revenue that allowed them to stay in service (Dr. Winograd, personal communication).

The DMH made some adjustments to encourage treatment agencies to stick with the MedFirst approach. The adjustments include increasing the marginal reimbursement rate to cover some components of service that might not always get billed, such as calling clients back or completing pharmacy prior authorization forms (Dr. Winograd, personal communication).

In addition to implementing the MedFirst approach with state STR funds, state officials have adopted other strategies to increase access to medications for OUD including working closely with the pharmacy team at Missouri Medicaid (Dr. Winograd, personal communication). Missouri Medicaid pharmacy staff removed requirements for automatic step-down dosing at 6 months and prior authorization requirements for Suboxone (Dr. Winograd, personal communication).

However, a serious concern for the DMH is the return to traditional practices if further funding cannot be found (Dr. Winograd, personal communication). TAU can vary between treatment agencies, and may not always include medication, but clients within a treatment agency

that did receive STR funding can be allocated to MedFirst or TAU. The DMH found within these treatment agencies, 84% of clients in MedFirst are receiving medication while only 40% of those assigned to TAU receive medication (Dr. Winograd, personal communication).

The TAU clients are also not benefiting from timely access to medication or being retained in treatment at the same rates as those in the MedFirst group (Dr. Winograd, personal communication). In 2020, Dr. Winograd and her colleagues will be examining the unanticipated finding to determine how decisions are made to send a client on a MedFirst or TAU path, and why TAU patients are being treated differently (personal communication).

Dr. Winograd recommends that others who embark on a similar path remember the evidence supports providing patients with medication first to reduce disordered use of opioids and assist with recovery (personal communication). She also believes it is important that those who create policies look to those who are being affected by the policies, in this case those who have an OUD, and understand what is working for them (Dr. Winograd, personal communication).

Dr. Winograd remarked there are 4 levels that will always be both barriers and facilitators to implementing a new approach to treatment (personal communication):

- System (e.g., reimbursement policies, billing requirements)
- Agency (e.g., number of waived prescribers, experience of staff)
- Provider (e.g., internal biases)
- Patient (e.g., experience with medical professionals, treatment preference)

Dr. Winograd summed this up by stating, “Don’t rule out the possibility of implementing what is best because it’s going to be hard policy- and practice-wise. Start at the end with what you know has to get done for the people whose lives we are trying to save and then figure out how to work out the mess in-between.”

Virginia

In April 2017, Virginia implemented an enhanced Medicaid SUD benefit, known as Addiction and Recovery Treatment Services (ARTS), which prioritized MAT and preferred OBOT providers.⁴¹ Preferred OBOTs provide treatment for those with OUD by co-locating access to buprenorphine-waivered prescribers and licensed psychosocial providers in a variety of settings (e.g., physician’s offices, Federally Qualified Health Centers).⁴¹

Following the introduction of the ARTS benefit, Virginia Department of Medical Assistance Services (DMAS) staff conducted site visits at preferred OBOT provider offices and gathered information about how the delivery of the ARTS benefit could be improved (Virginia Medicaid staff, personal communication). These benefit changes were implemented to reduce barriers to treatment and ensure treatments provided were evidence-based (Virginia Medicaid staff, personal communication).

The changes included⁴¹:

- Removal of prior authorization for preferred products (e.g., Suboxone film up to 24 mg) for in-network providers
- Removal of limits such as required dose tapering or time limits to pharmacotherapy treatments (e.g., buprenorphine, Suboxone)
- Same day access to pharmacotherapy treatments (e.g., if a patient presented to clinic for a medical issue and it was determined they had a co-occurring OUD and were interested in treatment, they could be provided with treatment that day and the provider could bill for same day treatment of medical and behavioral care visits)
- Not requiring members to accept ongoing counseling or psychotherapy as a condition of receiving pharmacotherapy
- Removal of automatic lock-in to a prescriber or group of prescribers for patients receiving MAT
- Promotion of co-prescription of naloxone with buprenorphine prescriptions

In February 2019, a Medicaid bulletin was issued by the director of DMAS to clarify the 2017 ARTS benefit and promote related services that were being underutilized (e.g., screening and treatment for infectious diseases like hepatitis C, reproductive health services including accessing contraception).⁴² DMAS followed this bulletin with an outreach and training webinar, led by the Virginia Chief Medicaid Officer and an addiction consultant, to inform providers about the evidence-based treatments being promoted (Virginia Medicaid staff, personal communication).

Much of the information provided in the bulletin was from preferred OBOT provider feedback collected during ongoing site visits (Virginia Medicaid staff, personal communication). Feedback was collected and shared with stakeholders (e.g., providers of outpatient or residential treatment, mental health providers, OBOT providers) to gain further feedback and consensus on the messages that would form the bulletin (Virginia Medicaid staff, personal communication). For example, clarification was needed for delinking buprenorphine product prescriptions with requirements of prior authorization and counseling (Virginia Medicaid staff, personal communication).

The Virginia Board of Medicine (BOM) requires that patients receiving medications for OUD are provided with SUD counseling in the office, or referred to a mental health provider for counseling.⁴³ The BOM also requires documentation in the patient record on the provision or referral of counseling for the patient to continue receiving medication.⁴³

The DMAS worked closely with the BOM to ensure the changes around not requiring ongoing counseling satisfied the BOM requirements (Virginia Medicaid staff, personal communication). The DMAS and BOM agreed documentation in the patient record of a referral to counseling, or continuation of counseling, would satisfy the requirements (Virginia Medicaid staff, personal communication). The 2019 bulletin clarified the delinking of buprenorphine product prescriptions with requirements of prior authorization and

counseling (Virginia Medicaid staff, personal communication). The emphasis during the webinar was to assess the individual and the need for psychosocial services and refer patients on an as-needed basis based on clinical judgment (Virginia Medicaid staff, personal communication).

Virginia officials do not yet have evaluation data on the relationship of benefit changes and access to and retention in treatment or utilization of behavioral health services. It will be some time before these results will be available due to other changes that occurred around the same time (e.g., Medicaid expansion; Virginia Medicaid staff, personal communication). However, providers have been positive about the changes, saying it has helped to destigmatize MAT and addiction (Virginia Medicaid staff, personal communication). Virginia Medicaid staff offered the following advice for other states wanting to expand access to OUD treatment (Virginia Medicaid staff, personal communication):

- **Engage stakeholders:** Elicit stakeholder feedback to learn what the barriers to implementation are, and revisit feedback with them to make sure concerns are addressed and the correct messages are communicated more broadly
- **Disseminate policy changes:** Publicize coverage changes through the press and wider media; not everyone will read Medicaid memos
- **Evidence-based policy:** Use current evidence to remove existing barriers (e.g., prior authorization, dose limits, counseling), as it is clear the benefits of pharmacotherapy outweigh the harms
- **Reframe the question on counseling:** “Do you want counseling to be a barrier to life-saving treatment?” For example, medication is a first-line treatment for other conditions, such as diabetes and depression, while counseling, nutrition, and exercise are add-on components to treating these conditions. Medication is more readily available than counseling and many patients experience barriers to counseling such as transportation or time off of work (Virginia Medicaid staff, personal communication).

Veterans Affairs

In May 2018, the VA launched the SCOUTT Initiative nationwide in an effort to expand access to SUD treatments outside of VA SUD specialty care clinics (Dr. Hildi Hagedorn, personal communication). The VA found it had a population of patients who had developed OUDs through long-term use of prescribed opioids, and this population was different to those traditionally seen in VA SUD specialty care clinics (e.g., those who may be using illegal opioids such as heroin, or using illicitly obtained prescription opioids) (VA staff, personal communication).

The VA found this population was often refusing referral and treatment at specialty clinics because patients did not identify as someone with an addiction, and there was not capacity within the SUD clinics to see all the patients needing assistance (VA staff, personal communication). There was interest in getting patients medication treatment outside of the traditional SUD clinics, and some VA facilities were doing this locally, but a national model was needed. Thus, the SCOUTT Initiative was born with Karen Drexler, MD, National Mental Health Program Director - Substance Use Disorders in the VA, leading the initiative (VA staff, personal communication).

Not only would the SCOUTT Initiative expand access to medications for OUD to nonspecialty clinics such as primary care and general mental health, it would also explicitly advise that patients not be denied access to treatment if they were unwilling or unable to attend counseling or other psychosocial interventions (Dr. Hagedorn, personal communication). Patients also would not be automatically tapered as is common for those receiving medication for OUD (Dr. Hagedorn, personal communication).

The SCOUTT initiative began with a series of webinars attended by leaders from the Veterans Integrated Service Networks (VISNs), which represent the 19 VA geographical administrative regions.

The initial webinars in May 2018 aimed to (Dr. Hagedorn, personal communication):

- Get the word out about the initiative
- Clarify the goals of the initiative
- Explain what role the VISN leadership would play
- Describe the expectations for the teams delivering the initiative

Following the informational webinars, a national 2-day conference was held in August 2018 with 19 pilot teams and leadership from each VISN attending (Dr. Hagedorn, personal communication). The team members came from 2 distinct clinics from one facility from each VISN—a Level 1 (e.g., primary care, general mental health) or Level 2 (e.g., specialist SUD clinics) clinic—and were composed of clinicians, nurses, therapists, and a pharmacist, in addition to regional leadership (VHA staff, personal communication).

Generally, practitioners in these teams did not communicate with each other outside of sending or receiving a referral for treatment, so the conference also gave them an opportunity to establish stronger relationships (Dr. Hagedorn, personal communication). Practitioners attending the conference also had the opportunity to complete training to become a buprenorphine (X-waiver) prescriber (Dr. Hagedorn, personal communication).

The 2-day conference included (Dr. Hagedorn, personal communication):

- Information on setting up OBOTs, including examples of models (e.g., medical management,¹⁵ collaborative care⁴⁴)
- Presentations from providers who had successfully implemented similar services
- Presentations from patients who had experience with OUD medication treatment
- Breakout sessions for the teams to develop action plans and strategies for implementation

Teams check in with a local facilitator at least once a month to review their action plan, discuss successes and problems, and be directed to resources or strategies to overcome problems (Dr. Hagedorn, personal communication). Additionally, there are 2 monthly calls where all teams come

together to provide site reports, be informed of administrative issues or plans with the initiative, and receive educational seminars on topics related to OUD medication treatment (Dr. Hagedorn, personal communication).

A number of issues encountered in the regions have been identified during the pilot phase. For example, some facilities found further credentialing was required for providers who had completed X-waiver training (Dr. Hagedorn, personal communication). The providers were being asked to complete something akin to a performance evaluation in which an experienced provider would review cases to determine if appropriate treatments were being prescribed (Dr. Hagedorn, personal communication). This required many additional hours of paperwork and proved to be a deterrent for providers to become waived prescribers (Dr. Hagedorn, personal communication).

In October 2019, a VHA mandate was issued stating further training was not necessary for those who have completed X-waiver training.⁴⁵ SCOUTT leaders also found the special prescribing waiver deterred some practitioners from obtaining an X-waiver because they believed OUD medication products are inherently more dangerous than prescription opioids since no special privileges from the Drug Enforcement Administration are necessary to prescribe the latter (Dr. Hagedorn, personal communication).

VHA providers already work with some of the most chronic and complex patients,⁴⁶ and carry large patient loads (Dr. Hagedorn, personal communication). The VHA expects primary care physicians (PCPs) to see each patient in their panels 1 to 2 times per year (Dr. Hagedorn, personal communication). For example, a patient with an addiction disorder receiving buprenorphine needs to be seen several times in the first weeks and months of treatment and this can be difficult to manage for the PCP (Dr. Hagedorn, personal communication).

To manage this burden, the SCOUTT teams include nurses and clinical pharmacists who can do everything other than diagnose or prescribe (Dr. Hagedorn, personal communication). While nurse care management was one of the main models promoted during the conference, in reality, more clinical pharmacists were readily available within the VHA and have provided the role of case manager (Dr. Hagedorn, personal communication).

Some facilities, for example the Minneapolis VA, have also implemented the use of telehealth to reach more geographically remote patients (Dr. Hagedorn, personal communication). Facilities have generally been able to create models of care that work best with its current staff and resources as no additional funding has been available for adding staff (Dr. Hagedorn, personal communication).

The pilot sites have seen an increase in the number of waived prescribers and number of patients receiving buprenorphine products in the first year of the initiative (Dr. Hagedorn, personal communication). Data through the end of September 2019 indicate waived prescribers have nearly doubled and patients receiving medications for OUD have doubled.⁴⁷ While patients are not required to accept ongoing counseling, the VA has not actively collected the data on how many continue to access counseling (Dr. Hagedorn, personal communication).

The VA has also found providers have been amazed at the difference this access has made to the lives of their patients (Dr. Hagedorn, personal communication). Patients have expressed gratitude for being able to get their lives back on track and function in ways they have not done in years, or even decades (Dr. Hagedorn, personal communication). This has bolstered the providers and made them real champions of OUD medication treatment outside the specialty SUD clinics (Dr. Hagedorn, personal communication).

According to Dr. Hagedorn, the SCOUTT Initiative has been successful in the pilot program because of 3 key ingredients (personal communication):

- Providing ongoing facilitation to the sites through the monthly one-to-one calls and twice monthly group calls
- Providing the teams with models^{15,44} to adapt to fit with their local resources (e.g., the use of clinical pharmacists instead of nurses for a nurse-care management model)
- A local leader or pair of leaders who have the power to allocate resources, require or strongly encourage change, and be able to keep focus on the issue

Dr. Hagedorn believes sharing quarterly metrics with the sites on the number of waived prescribers, patients receiving medication for OUD, and patients who have initiated and remain in treatment for at least 90 days has helped (personal communication). These metrics allow comparison between sites (Dr. Hagedorn, personal communication). Each site has to report back to the group every few months about their progress, which also provides accountability (Dr. Hagedorn, personal communication).

In 2020, 3 regional conferences will be held with the original 19 teams, who will be matched with another team from their region to provide training, bringing the number of teams offering expanded access to OUD medication treatment to 38 (Dr. Hagedorn, personal communication).

Considerations for State Medicaid Agencies

State Medicaid agencies and stakeholders should consider using recent evidence and clinical practice guidelines in this report and other Center reports,⁴⁸ which suggest additional counseling and psychosocial interventions do not necessarily provide an added benefit in persons with an OUD who receive appropriate medication treatment (e.g., Suboxone). It should be noted that none of the included studies tested behavioral interventions with medications for OUD against medications alone.

Nevertheless, varying intensities and types of behavioral interventions did not provide an added benefit. Therefore, state agencies and stakeholders may want to consider covering counseling and other psychosocial services if a beneficiary wants to use them, but not as a requirement to receive medications for OUD.

States could also work with other entities to remove barriers around prior authorization for preferred products and limits around treatment length and tapering. Providing examples of evidence-based interventions and models of care for SUD treatment to state agencies, and allowing those agencies the flexibility to implement those interventions and models with available resources, could expand access to medication for OUD treatment. Utilizing other health care staff (e.g., nurses, pharmacists) to provide services not related to diagnosis or prescribing medications could alleviate burdens placed on waived prescribers and primary care physicians in the delivery and maintenance of OUD treatment.

When new approaches are rolled out, several avenues of publicizing those changes should be employed as well as providing ongoing support and facilitation to enable practitioners to stick to new practices until they become the norm. Stakeholders from the medical and patient populations should be consulted to determine what barriers and facilitators exist to accessing and remaining in treatment so workable solutions can be identified and implemented.

Discussion

A 2019 report from the National Academies of Sciences states that use of agonist medications for OUD for an indefinite amount of time is the safest treatment for those with an OUD.³ A recent analysis of Medicaid beneficiaries who received buprenorphine for at least 6 months and up to 18 months found those with longer retention periods had lower odds of emergency department visits or hospitalizations.⁴⁹ This review focused on published evidence in populations already stabilized on a medication for OUD (e.g., Suboxone). One RCT of CBT showed

some improvements for abstinence in patients with an OUD caused primarily from prescription opioids.¹² The add-on in-clinic online modules, which was time intensive for participants, requiring three 30-minute visits to the clinic each week for 12 weeks, on top of other counseling and medical visits, did show improvements in abstinence and retention in treatment, particularly in those who had attempted treatment previously.¹¹

Despite the majority of findings showing no statistical differences between groups, participants generally had significant improvements in outcomes related to OUD from baseline measures to the end of the trial. This suggests there is little evidence supporting an additional benefit of counseling or psychosocial interventions when appropriate pharmacotherapy is provided. The studies generally report on group averages, not the individual, and therefore may not accurately reflect the needs of an individual. Additionally, all of the clinical evidence in this review was deemed to be of poor methodological quality with high rates of attrition and short treatment periods with little or no follow-up in the majority of the studies. Conclusions should be interpreted with caution.

A 2011 Cochrane review of 27 studies came to this conclusion too.⁷ The Cochrane review added that programs aimed at OUD treatment generally have mandatory requirements for some form of counseling and trials have usually evaluated additional types of counseling treatments and not whether pharmacotherapy treatment is as effective without counseling treatments.⁷ This remains true of more recently published evidence, as it reflects current practice in the U.S. where it is still common to have mandatory counseling requirements alongside medications for OUD.

Clinical practice guidelines are beginning to reflect conclusions from the evidence that counseling is not necessarily beneficial for all patients with an OUD. The systematic reviews that supported the 2018 guidelines from British Columbia²⁵ and the Canadian Research

Initiative in Substance Misuse²³ came to the conclusion that psychosocial therapies should be individualized and available, but not required for continuous access to medication.

These changes are also beginning to be rolled out in SUD treatment programs as evidenced by the models and approaches reported here. Each of the models has taken the approach of “no wrong door” for entry to treatment and removed several barriers to enable patients to access medications more easily.

Common barriers that have been removed are prior authorization for preferred treatments such as Suboxone, lengthy assessments before medication can be prescribed, arbitrary time limits for treatment, and the requirement to accept and continue counseling. The focus on medications for OUD without barriers has allowed providers to reach more people with an OUD through different avenues of access (e.g., primary care, mental health services) and helped improve those lives.

The scope of this review excluded commonly cited studies, such as POATS, which is often referenced in systematic reviews as it concluded counseling therapies do not add additional benefit for those receiving medication for OUD.¹⁸ In general, recent evidence has continued to support the addition of more intensive or different modes of counseling or psychosocial therapies does not translate to additional improvement in outcomes related to OUD.

The body of evidence reviewed in this report and current clinical practice guidelines indicate OUD is a complex and multifaceted condition. A “one size fits all” approach might not work to effectively meet the needs of individuals with OUD. State agencies and stakeholders might consider being supportive of medications to treat OUD and offering counseling and psychosocial therapies as a voluntary option.

Limitations of this Rapid Review

This review has several limitations. We only included studies published from January 2009

through August 2019, in the English language, and conducted in the United States. While there are currently no accepted standards for rapid review production, we conducted this review by searching a limited number of databases and with a single Center researcher screening for studies for inclusion; therefore, it is possible relevant studies were overlooked.

Nevertheless, we asked peer reviewers to identify studies missing from the report and none were identified. We focused on published

evidence in populations already stabilized on a medication for OUD (e.g., Suboxone) and did not include those naïve to medication for OUD post-randomization (e.g., the POATS study¹⁸). Published evidence continues to reflect current practices in the U.S. that generally require mandatory counseling when medications for OUD are prescribed, hence all participants in the included RCTs received counseling to some degree; no included studies compared medication only to medication plus counseling.

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Appendix A. Methods

Clinical Evidence Methods

Search Strategy

We searched Medicaid Evidence-based Decisions Project (MED) clinical evidence sources to identify systematic reviews (with and without meta-analyses), randomized controlled trials (RCTs), and secondary analyses of RCTs, including the terms *opioid use disorder*, *medication assisted treatment*, *opioid substitution treatment*, *counseling*, *psychosocial*, *behavior change*. We limited searches of sources to citations published after January 2009 through July 15, 2019.

We searched the following MED evidence sources:

- Ovid MEDLINE including In-Process & Other Non-Indexed Citations and Epub Ahead of Print
- Cochrane Library (Wiley Interscience)
- PsycInfo
- Google Scholar

Ovid MEDLINE Search Strategy

1. exp Opioid-Related Disorders/
2. substance-related disorders/
3. ((opioid* or opiate* or narcotic*) adj2 (disorder* or abuse* or addict* or dependenc*)).ti,ab,kw,kf.
4. oud.ti,ab,kw,kf.
5. ((drug* or substance* or narcotic*) adj2 (disorder* or abuse* or addict* or dependenc* or misus* or use*)).ti,ab,kw,kf.
6. ((heroin or morphine) adj2 (disorder* or abuse* or addict* or dependenc* or misus* or use*)).ti,ab,kw,kf.
7. or/1-6
8. (maintenance adj2 therap*).ti,ab,kw,kf.
9. ((medication* or medication-assisted) adj2 (therap* or treatment*)).ti,ab,kw,kf.
10. or/8-9
11. Opiate Substitution Treatment/
12. ((opioid* or opiate*) adj2 (substitution or replacement or maintenance or maintain*) adj2 (treatment* or therap*)).ti,ab,kw,kf.
13. ((opioid* or opiate*) adj2 agonist adj2 (treatment* or therap*)).ti,ab,kw,kf.
14. ((buprenorphine or methadone or naloxone) adj3 (treatment* or therap* or maintenance or maintain*)).ti,ab,kw,kf.
15. or/11-14

16. (7 and 10) or 15
17. counseling/ or exp directive counseling/ or distance counseling/
18. Self-Help Groups/
19. Psychosocial Support Systems/
20. social adjustment/
21. Behavior Control/
22. exp "Treatment Adherence and Compliance"/
23. Risk Reduction Behavior/
24. exp psychotherapy/
25. counsel*.ti,ab,kw,kf.
26. self-help.ti,ab,kw,kf.
27. peer-support*.ti,ab,kw,kf.
28. (peer-led or peer led).ti,ab,kw,kf.
29. psychosocial.ti,ab,kw,kf.
30. exp Cognitive Behavioral Therapy/
31. (cbt or cognitive behavio* therap* or cognitive* therap*).ti,ab,kw,kf.
32. social support.ti,ab,kw,kf.
33. (psycho* adj2 therap*).ti,ab,kw,kf.
34. psychotherap*.ti,ab,kw,kf.
35. contingenc*.ti,ab,kw,kf.
36. motivational interview*.ti,ab,kw,kf.
37. community health services/ or community mental health services/
38. mental health service*.ti,ab,kw,kf.
39. mental health services/
40. social support/
41. risk reduction.ti,ab,kw,kf.
42. behavio* change.ti,ab,kw,kf.
43. therapeutic communit*.ti,ab,kw,kf.
44. ("12 step" or 12-step or twelve step or twelve-step).ti,ab,kw,kf.
45. voucher*.ti,ab,kw,kf.

46. ((shared* or group*) adj3 appointment*).ti,ab,kw,kf.
47. (group* adj2 (visit or visits or management or therap*)).ti,ab,kw,kf.
48. exp reward/
49. "Reinforcement (Psychology)"/
50. or/17-49
51. 16 and 50
52. ("clinical trial" or "clinical trial, phase i" or "clinical trial, phase ii" or clinical trial, phase iii or clinical trial, phase iv or controlled clinical trial or "multicenter study" or "randomized controlled trial"). pt. or double-blind method/ or clinical trials as topic/ or clinical trials, phase i as topic/ or clinical trials, phase ii as topic/ or clinical trials, phase iii as topic/ or clinical trials, phase iv as topic/ or controlled clinical trials as topic/ or randomized controlled trials as topic/ or early termination of clinical trials as topic/ or multicenter studies as topic/ or ((randomi?ed adj7 trial*) or (controlled adj3 trial*) or (clinical adj2 trial*) or ((single or doubl* or tripl* or treb*) and (blind* or mask*))). ti,ab,kw. or ("4 arm" or "four arm").ti,ab,kw.
53. (((comprehensive* or integrative or systematic*) adj3 (bibliographic* or review* or literature)) or (meta-analy* or metaanaly* or "research synthesis" or ((information or data) adj3 synthesis) or (data adj2 extract*))).ti,ab. or (cinahl or (cochrane adj3 trial*) or embase or medline or psyclit or (psycinfo not "psycinfo database") or pubmed or scopus or "sociological abstracts" or "web of science"). ab. or ("cochrane database of systematic reviews" or evidence report technology assessment or evidence report technology assessment summary).jn. or Evidence Report: Technology Assessment*.jn. or ((review adj5 (rationale or evidence)).ti,ab. and review.pt.) or meta-analysis as topic/ or Meta-Analysis.pt.
54. ((clinical adj3 pathway) or (clinical adj3 pathways) or (practice adj3 parameter) or (practice adj3 parameters)).ti,ab,kw. or algorithms/ or care pathway.ti,ab,kw. or care pathways.ti,ab,kw. or clinical protocols/ or Consensus/ or Consensus Development Conference.pt. or Consensus Development Conference, NIH.pt. or Consensus Development Conferences as Topic/ or Consensus Development Conferences, NIH as Topic/ or critical pathway/ or guidance.ti,ab. or guideline*.ti. or guidelines as topic/ or practice guidelines as topic/ or Health Planning Guidelines/ or practice guideline/
55. or/52-54
56. 51 and 55
57. (pregnant or pregnancy).ti.
58. 56 not 57
59. limit 58 to (english language and yr="2009 -Current")

Cochrane Library Search Strategy

- #1 MeSH descriptor: [Opioid-Related Disorders] explode all trees
- #2 MeSH descriptor: [Substance-Related Disorders] explode all trees
- #3 ((opiod* or opiate* or narcotic*) near/2 (disorder* or abuse* or addict* or dependenc*)):ti,ab,kw

- #4 oud:ti,ab,kw
- #5 (drug* or substance* or narcotic* or heroin or morphine) near/2 (disorder* or abuse* or addict* or dependenc* or misus* or use*):ti,ab,kw
- #6 #1 or #2 or #3 or #4 or #5
- #7 (maintenance or medication assisted or medication-assisted or medication) near/2 (therap* or treatment*):ti,ab,kw
- #8 #6 and #7
- #9 MeSH descriptor: [Opiate Substitution Treatment] explode all trees
- #10 ((opiod* or opiate*) near/2 (substitution or replacement or maintenance or maintain* or agonist) near/2 (treatment* or therap*)):ti,ab,kw
- #11 ((buprenorphine or methadone or naloxone) near/3 (treatment* or therap* or maintenance or maintain*)):ti,ab,kw
- #12 #9 or #10 or #11}
- #13 #8 or #12
- #14 MeSH descriptor: [Counseling] explode all trees
- #15 MeSH descriptor: [Self-Help Groups] explode all trees
- #16 MeSH descriptor: [Psychosocial Support Systems] explode all trees
- #17 MeSH descriptor: [Social Adjustment] explode all trees
- #18 MeSH descriptor: [Behavior Control] explode all trees
- #19 MeSH descriptor: [Treatment Adherence and Compliance] explode all trees
- #20 MeSH descriptor: [Risk Reduction Behavior] this term only
- #21 MeSH descriptor: [Psychotherapy] explode all trees
- #22 MeSH descriptor: [Cognitive Behavioral Therapy] explode all trees
- #23 MeSH descriptor: [Community Mental Health Services] explode all trees
- #24 MeSH descriptor: [Community Health Services] this term only
- #25 MeSH descriptor: [Mental Health Services] this term only
- #26 MeSH descriptor: [Social Support] explode all trees
- #27 MeSH descriptor: [Reward] explode all trees
- #28 MeSH descriptor: [Reinforcement (Psychology)] explode all trees
- #29 counsel*:ti,ab,kw
- #30 self-help:ti,ab,kw

- #31 peer-support*:ti,ab,kw
- #32 (peer-led or peer led):ti,ab,kw
- #33 psychosocial:ti,ab,kw
- #34 (cbt or cognitive behavio* therap* or cognitive* therap*):ti,ab,kw
- #35 social support:ti,ab,kw
- #36 ((psycho* near/2 therap*) or psychotherap*):ti,ab,kw
- #37 contingenc*:ti,ab,kw
- #38 motivational interview*:ti,ab,kw
- #39 mental health service*:ti,ab,kw
- #40 risk reduction or risk-reduction:ti,ab,kw
- #41 behavio* change*:ti,ab,kw
- #42 therapeutic communit*:ti,ab,kw
- #43 (12 step or twelve-step or twelve step):ti,ab,kw
- #44 voucher*:ti,ab,kw
- #45 ((shared* or group*) near/3 appointment*):ti,ab,kw
- #46 (group* near/2 (visit or visits or management or therap*)):ti,ab,kw
- #47 #14 or #15 or #16 or #17 or #18 or #19 or #20 or #21 or #22 or #23 or #24 or #25 or #26 or #27 or #28 or #29 or #30 or #31 or #32 or #33 or #34 or #35 or #36 or #37 or #38 or #39 or #40 or #41 or #42 or #43 or #44 or #45 or #46
- #48 #13 and #47
- #49 #48 not pregnan*:ti with Cochrane Library publication date Between Jan 2009 and Jul 2019, in Cochrane Reviews
- #50 #48 not pregnan*:ti with Publication Year from 2009 to 2019, in Trials

PsyInfo

1. exp "opioid use disorder"/
2. exp Drug Abuse/
3. exp Drug Dependency/
4. ((opioid* or opiate* or narcotic*) adj2 (disorder* or abuse* or addict* or dependenc*)):ti,ab.
5. oud.ti,ab.
6. ((drug* or substance* or narcotic*) adj2 (disorder* or abuse* or addict* or dependenc* or misus* or use*)):ti,ab.

7. ((heroin or morphine) adj2 (disorder* or abuse* or addict* or dependenc* or misus* or use*)).ti,ab.
8. or/1-7
9. exp Group Counseling/ or exp Educational Counseling/ or exp Counseling/ or exp Psychotherapeutic Counseling/ or exp Community Counseling/ or exp Peer Counseling/ or exp Rehabilitation Counseling/
10. exp support groups/
11. psychosocial rehabilitation/ or psychosocial readjustment/ or therapeutic social clubs/
12. exp Treatment Compliance/
13. counsel*.ti,ab.
14. self-help.ti,ab.
15. peer-support*.ti,ab.
16. (peer-led or peer led).ti,ab.
17. psychosocial.ti,ab.
18. exp Cognitive Behavior Therapy/
19. (cbt or cognitive behavio* therap* or cognitive* therap*).ti,ab.
20. social support.ti,ab.
21. (psycho* adj2 therap*).ti,ab.
22. psychotherap*.ti,ab.
23. contingenc*.ti,ab.
24. motivational interview*.ti,ab.
25. mental health service*.ti,ab.
26. risk reduction.ti,ab.
27. behavio* change.ti,ab.
28. therapeutic communit*.ti,ab.
29. ("12 step" or 12-step or twelve step or twelve-step).ti,ab.
30. voucher*.ti,ab.
31. ((shared* or group*) adj3 appointment*).ti,ab.
32. (group* adj2 (visit or visits or management or therap*)).ti,ab.
33. "Acceptance and Commitment Therapy"/
34. or/9-33
35. (maintenance adj2 therap*).ti,ab.

36. (medication assisted adj2 treatment*).ti,ab.
37. (medication assisted adj2 therap*).ti,ab.
38. (medication-assisted adj2 treatment*).ti,ab.
39. (medication* adj2 treatment*).ti,ab.
40. ((opioid* or opiate*) adj2 (substitution or replacement or maintenance or maintain*) adj2 (treatment* or therap*).ti,ab.
41. ((opioid* or opiate*) adj2 agonist adj2 (treatment* or therap*).ti,ab.
42. ((buprenorphine or methadone or naloxone) adj3 (treatment* or therap* or maintenance or maintain*).ti,ab.
43. or/35-39
44. or/40-42
45. 8 and 43
46. (44 or 45) and 34
47. (pregnant or pregnancy).ti.
48. 46 not 47
49. limit 48 to (english language and yr="2009 -Current")

Inclusion Criteria

We included studies published in the English language and RCTs that met the PICO outlined below.

Populations

- Adults with an OUD receiving opioid agonist therapy (with or without naloxone)

Interventions

- Behavioral treatment interventions for OUD (e.g., counseling, self-help groups, contingency management), with opioid agonist therapy

Comparators

- Another behavioral intervention with an opioid agonist therapy
- Different frequencies or intensities of the same behavioral intervention with an opioid agonist therapy
- Opioid agonist therapy alone (methadone, buprenorphine with or without naloxone)

Efficacy and Effectiveness Outcomes

- Measures of retention in care or access
- Opioid-use-related outcomes, including mortality, overdose, substance use
- Utilization of services (e.g., emergency department visits)
- Health-related outcomes (e.g., levels of depression and anxiety)

- Housing status
- Quality of life
- Functional status
- Work or education status
- Engagement in criminal activity
- Measures of social engagement (e.g., relationship with children)
- Views and preferences of people with OUD
- Views and preferences of providers or payers of OUD services

Harm Outcomes

- Any reported harms

Exclusion Criteria

We excluded studies if they were not published in English, did not include a U.S. population, were conducted solely in pregnant women or incarcerated populations, and studies in which naltrexone is the only medication examined.

Clinical Practice Guidelines Methods

Search Strategy

We searched MED clinical practice guidelines sources to identify guidelines using the terms *opioid use disorder*, *opioid*, *psychosocial*. We limited searches of sources to citations published after January 2015 through August 2019.

We searched for clinical practice guidelines published in the past 5 years, using the following sources:

- Ovid MEDLINE including In-Process & Other Non-Indexed Citations and Epub Ahead of Print
- Centers for Disease Control and Prevention (CDC)
- Canadian Medical Association
- National Institute for Health and Care Excellence (NICE)
- Scottish Intercollegiate Guidelines Network (SIGN)
- Substance Abuse and Mental Health Services Administration (SAMHSA)
- U.S. Preventive Services Task Force
- Veterans Affairs/Department of Defense Clinical Practice Guidelines

Ovid MEDLINE Search Strategy

Please see the MEDLINE search strategy used for clinical evidence above.

Quality Assessment

Methodological Quality of Included Studies

We assessed the methodological quality of the included RCTs using standard instruments developed and adapted by MED that are modifications of instruments used by several renowned, respected organizations.⁵⁰ One experienced researcher independently rated the methodological quality of included studies. A second experienced researcher reviewed each assessment. Disagreement was managed by discussion.

Randomized Controlled Trials

Good-quality randomized controlled trials include a clear description of the population, setting, intervention, and comparison groups; a random and concealed allocation of patients to study groups; low dropout rates; and intention-to-treat analyses. Good-quality randomized controlled trials also have low potential for bias from conflicts of interest and funding source(s). Fair-quality randomized controlled trials have incomplete information about methods that might mask important limitations or a meaningful conflict of interest. Poor-quality randomized controlled trials have clear flaws that could introduce significant bias.

Clinical Practice Guidelines

We assessed the methodological quality of the guidelines using an instrument adapted from the Appraisal of Guidelines Research and Evaluation (AGREE) Collaboration.⁵¹⁻⁵³ Each rater assigned the study a rating of good, fair, or poor based on its adherence to recommended methods and potential for biases. A good-quality guideline fulfills all or most of the criteria outlined in the instrument. A fair-quality guideline fulfills some of the criteria, and its unfulfilled criteria are not likely to alter the recommendations. A poor-quality guideline met few or none of the criteria.

Policy Methods

Search Strategy

We conducted a search of MED policy sources to identify relevant policy briefs, national policy summaries, laws, regulations, and guidance using the terms *buprenorphine*, *opioid use disorder*, *naloxone*, *Suboxone*. Additionally, we conducted a Google search using the terms *buprenorphine*, *opioid use disorder*, *naloxone*, *Suboxone*, and reviewed key sources from reference lists.

We also interviewed officials in Missouri and Virginia, and other subject-matter experts in Missouri and Veterans Affairs.

We searched for major private payer policies using private payer websites including Aetna, Cigna, Anthem, and UnitedHealthcare. Search terms used include *buprenorphine*, *opioid use disorder*, *naloxone*, *Suboxone*.

Policy Sources Searched

- Henry J. Kaiser Family Foundation
- Substance Abuse and Mental Health Services Administration (SAMHSA)
- Urban Institute

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Appendix B. Evidence Tables

Table B1. Characteristics of included studies

| Author (Year) Study Design N (% male) Study Quality | Inclusion Criteria Setting Staff Intervention Duration Follow-up | Intervention(s) (n) | Comparator (n) |
|---|--|---|--|
| CBT | | | |
| Fiellin et al. (2013) ^{12,15} RCT N=141 (74% male) Poor | <u>Inclusion Criteria:</u> <ul style="list-style-type: none"> Opioid dependent without untreated psychosis or major depression No co-occurring alcohol, benzodiazepine or cocaine dependence Can understand and speak English <u>Setting:</u> Primary care clinic <u>Staff:</u> Physicians Masters or doctoral level clinicians trained in CBT <u>Intervention Duration:</u> 24 weeks (26 weeks total. First 2 weeks induced/stabilized on buprenorphine/naloxone before randomization.) <u>Follow-up:</u> Not reported | Physician management + CBT (n = 70) Up to 12 weekly sessions of 50 minutes per session Sessions focused on analysis of behavior, promoting behavioral activation, identifying and coping with drug cravings, enhancing drug-refusal skills, enhancing decision-making about high-risk situations, improving problem-solving skills. | Physician management only (n = 71) 15 to 20 minute session by physician with no CBT training Weeks 1 and 2: weekly Weeks 2 through 6: every 2 weeks Weeks 7 through 26: every 4 weeks Session followed structured note to review recent drug use, provide advice to maintain abstinence, review medical/psychiatric symptoms, UDS results, attendance at self-help groups |

Table B1. Characteristics of included studies (*continued*)

| Author (Year) Study Design N (% male) Study Quality | Inclusion Criteria Setting Staff Intervention Duration Follow-up | Intervention(s) (n) | Comparator (n) |
|--|---|--|---|
| Otto et al. (2014) ¹⁷ RCT N=78 (55% male) Poor | <p><u>Inclusion Criteria:</u></p> <ul style="list-style-type: none"> Stable dose of methadone for ≥ 2 weeks Unsuccessful completion of TAU (did not achieve take-home methadone dose, positive drug screening ≥ 2 times in 2 months, never achieved 2 consecutive negative toxicology screens) Current chronic stress- or or affective disorder (e.g., unemployment or limited-employment) <p><u>Setting:</u> Methadone clinics in Boston, MA</p> <p><u>Staff:</u> MSc or PhD clinicians</p> <p><u>Intervention Duration:</u> 12 weeks</p> <p><u>Follow-up:</u> 2 weeks, 1 month, 2 months</p> | TAU + CBT-IC (n = 41) 12 weekly, 60-minute sessions 3 booster sessions (2 weeks, 1 month and 2 months post-intervention) Coping skills, behavioral patterns around cravings and drug use, repeated exposure to emotional cues to increase drug craving and then reduce Treatment Grouped craving TAU: methadone maintenance with mandatory weekly group counseling | TAU + Individual drug counseling (n = 37) 12 weekly, 60-minute sessions 3 booster sessions (2 weeks, 1 month and 2 months post-intervention) Similar to 12-step model, change behaviors to maintain abstinence |

Table B1. Characteristics of included studies (*continued*)

| Author (Year) Study Design N (% male) Study Quality | Inclusion Criteria Setting Staff Intervention Duration Follow-up | Intervention(s) (n) | Comparator (n) |
|--|---|---|--|
| Employment-focused Counseling | | | |
| Coviello et al. (2009) ¹⁴ RCT N=23 (48% male) Poor | <p><u>Inclusion Criteria:</u></p> <ul style="list-style-type: none"> • In methadone maintenance treatment • 18 to 55 years old • Unemployed or under-employed (< 10 hours per week) • Able and interested in working <p><u>Setting:</u> 2 urban, 1 rural community-based methadone maintenance clinics in Pennsylvania</p> <p><u>Staff:</u> Counselors</p> <p><u>Intervention Duration:</u> 6 months</p> <p><u>Follow-up post-baseline:</u> 6 months</p> | <p>Employment-focused counseling (n=12)</p> <ul style="list-style-type: none"> • Individual weekly sessions (up to 14 weeks preparatory + up to 12 weeks post-employment), 45 minutes per session • Preparatory/drug counseling: • Counselor determined focus of sessions (drug, employment, combo, or other) at start of each session by being asked about current experiences of problems in 9 areas (e.g., drugs, family, legal) • Post-employment counseling • Identify problems (e.g., take home doses, transportation planning, budgeting) and motivation for transitioning into and staying in employment • Received unspecified compensation for completing assessments | <p>Drug counseling (n=11)</p> <ul style="list-style-type: none"> • Received unspecified compensation for completing assessments |

Table B1. Characteristics of included studies (*continued*)

| Author (Year) Study Design N (% male) Study Quality | Inclusion Criteria Setting Staff Intervention Duration Follow-up | Intervention(s) (n) | Comparator (n) |
|--|--|---|---|
| Motivational Interviewing | | | |
| Nyamathi et al. (2010) ¹³ RCT N=256 (59% male) Poor | <p>Inclusion Criteria:</p> <ul style="list-style-type: none"> • Aged 18 to 55 years • Receiving methadone ≥ 3 months • Moderate-to-severe alcohol use (based on ASI) <p>Setting: 5 methadone clinics in the Los Angeles area</p> <p>Staff: Therapists trained to deliver motivational interviewing; Research nurse and trained research staff</p> <p>Intervention Duration: 6 weeks</p> <ul style="list-style-type: none"> • Follow-up: 6 months | <p>Group (n=79) or Individual (n=90) Motivational Interviewing (n=87)</p> <ul style="list-style-type: none"> • 3 sessions over 6 weeks (1 session every 2 weeks) • Each session 60 minutes • Explored impact of alcohol use on health and risky behaviors | <p>Nurse-led group hepatitis health promotion (n=87)</p> <ul style="list-style-type: none"> • 3 sessions over 6 weeks (1 session every 2 weeks) • Each session 60 minutes |
| Online Modules | | | |
| Christensen et al. (2014) ¹¹ RCT N=170 (54% male) Poor | <p>Inclusion Criteria:</p> <ul style="list-style-type: none"> • Opioid dependent stabilized on buprenorphine prior to randomization • 20 to 63 years old <p>Setting: Academic research center in Arkansas</p> <p>Staff: Therapists; Certified SUD counselor</p> <p>Intervention Duration: 12 weeks</p> <ul style="list-style-type: none"> • Follow-up post-baseline: None | <p>Web-based modules completed in clinic (n=92)</p> <ul style="list-style-type: none"> • Each module ~ 30 minutes, 3 times per week; Therapist determined sequence of modules based on participant drug dependency. Modules included topics on self-management planning and drug-refusal training among others. • Contingency management up to ~\$1,000 in vouchers for negative urinalysis • 30 minute counseling session every 2 weeks | <p>Control (n=78)</p> <ul style="list-style-type: none"> • Contingency management up to ~\$1,000 in vouchers for negative urinalysis • 30 minute counseling session every 2 weeks |

Table B1. Characteristics of included studies (*continued*)

| Author (Year) Study Design N (% male) Study Quality | Inclusion Criteria Setting Staff Intervention Duration Follow-up | Intervention(s) (n) | Comparator (n) |
|--|---|--|---|
| Videoconference-delivered Counseling | | | |
| King et al. (2014) ¹⁶ RCT N=85 (44% male) Poor | <u>Inclusion Criteria:</u> <ul style="list-style-type: none"> • Outpatients at a an addiction treatment clinic • Drug abstinent and counseling adherent for previous 30 days • Had functioning computer with internet <u>Setting:</u> Online <u>Staff:</u> Counselors <u>Intervention Duration:</u> 12 weeks <u>Follow-up:</u> 1, 2, and 3 months | eGetgoing (web-based videoconferencing) individual counseling (n=50) <ul style="list-style-type: none"> • 1 weekly session, 30 to 40 minutes per session • Received \$30 for baseline assessment, \$10 per follow-up at months 1 and 2, and \$15 for month 3 | In-person counseling (n = 35) 1 weekly session, 30 to 40 minutes per session |

Abbreviations. CBT: cognitive behavioral therapy; CBT-IC: cognitive behavioral therapy – internal cues; CG: control group; MI-G: motivational interviewing – group; MI-I: motivational interviewing – individual; NR: not reported; RCT: randomized controlled trial; SUD: substance use disorder; TAU: treatment as usual.

Table B2. Findings of included studies

| Author (Year) Study Design N (% male) Study Quality | Intervention (n) vs Comparator (n) Findings |
|---|---|
| CBT | |
| Fiellin et al. (2013) ^{12,15} RCT N = 141 (74% male) Poor | Physician management + CBT (n=70) vs Physician management only (n=71) <u>Self-report opioid use</u> <ul style="list-style-type: none"> For both groups, Baseline: 5.3 days/week, 95% CI, 5.1 to 5.5 vs 26 weeks: .4 days, 95% CI, .1 to .6 NSD between 2 groups P = .96 NSD between treatments over time P = .44 <u>Session attendance</u> <ul style="list-style-type: none"> Physician Management (8 possible sessions): 4.6 sessions, SD = 2.4 vs 5.9 sessions, SD = 2.4; P = .002 CBT (12 possible sessions): 6.7 sessions, SD = 3.3 From secondary analysis by Moore et al. (2016) ¹² <u>Completed treatment</u> <ul style="list-style-type: none"> Primary Rx opioid: physician management 11/23 (48%) vs CBT 14/26 (54%) Heroin: physician management: 20/47 (44%) vs CBT: 20/44 (43%) NSD between primary opioid use groups, P = .72 <u>Urine drug screen (negative for opioids)</u> <ul style="list-style-type: none"> Primary Rx opioid: CBT 12.0, SD = 8.4 vs Physician management 9.7, SD = 8.1 Heroin: CBT 9.2, SD = 8.5 vs Physician management 10.4, SD = 8.2 NSD between primary opioid use groups, P = .48 <u>Urine drug screen (negative for all drugs)</u> <ul style="list-style-type: none"> Primary Rx opioid: CBT 7.6 weeks, SD = 7.9 vs Physician management 3.7 weeks, SD = 5.4; P = .04 Heroin: CBT 5.1 weeks, SD = 6.5 vs Physician management 6.4 weeks, SD = 7.0 NSD between primary opioid use groups, P = .28 |
| Otto et al. (2014) ¹⁷ RCT N=78 (55% male) Poor | TAU + CBT-IC (n=41) vs TAU + Individual drug counseling (n=37) <u>Addiction Severity Index</u> <ul style="list-style-type: none"> No significant effects for Treatment Group P = .89; Gender P = .3; Gender by Time P = .96; Treatment Group by Time P = .65; Three-way interaction P = .67 <u>Positive toxicology swab</u> <ul style="list-style-type: none"> No significant main effects of Time P = .31; Treatment Group P = .53; Gender P = .80 No significant interactions of Gender by Time P = .41; Treatment Group by Time P = .93; Three-way interaction P = .72 <u>Anxiety Sensitivity Index</u> <ul style="list-style-type: none"> No significant effects for Treatment Group P = .83; Gender P = .57; Their interaction P = .70 |

Table B2. Findings of included studies (*continued*)

| Author (Year) Study Design N (% male) Study Quality | Intervention (n) vs Comparator (n) Findings |
|---|---|
| Employment-focused Counseling | |
| Coviello et al. (2009) ¹⁴ RCT N=23 (48% male) Poor | Employment-focused counseling (n=12) vs Drug counseling (n=11) <u>Past 30 day opioid use (at 6 months)</u> <ul style="list-style-type: none"> • Employment: 1.1 days vs CG: .43 days • Overall .82 days <u>% Employed (at 6 months)</u> <ul style="list-style-type: none"> • NSD between groups Employment: 50% (5/10) vs CG: 71% (5/7) • Overall 59%; P < .05 <u>Average monthly income (at 6 months)</u> <ul style="list-style-type: none"> • NSD between groups Employment; \$235 vs CG: \$540 • Overall Mean = \$361; P < .05 <u>HIV risk (Risk Assessment Battery, at 6 months)</u> <ul style="list-style-type: none"> • NSD between groups Employment: 2.4 vs CG: 4.4 • Overall, 3.1; P < .05 <u>Attendance</u> <ul style="list-style-type: none"> • NSD between groups (26 possible sessions) Employment: Mean 14.1 sessions, SD = 6.7 vs CG: Mean = 12.1, SD = 9.3; P = NR |
| Motivational Interviewing | |
| Nyamathi et al. (2010) ¹³ RCT N = 256 (59% male) Poor | Group (n=79) or Individual (n=90) Motivational Interviewing (n=87) vs Nurse-led group hepatitis health promotion (n=87) <u>Drug use using Addiction Severity Index – Lite Version</u> <ul style="list-style-type: none"> • Average change in daily drug use since baseline, 30-day recall (at 6 months): MI-I Mean .93, SE = .32 vs MI-G Mean = 1.07, SE = .38 vs CG Mean = .35, SE 0.32. P < .005 for individual subjects in intervention groups. • Average change in daily drug use since baseline, 6 months recall (at 6 months): MI-I Mean = .33, SE = .18 vs MI-G Mean = .04, SE = .17 vs CG Mean = .12, SE = .16 |

Table B2. Findings of included studies (*continued*)

| Author (Year) Study Design N (% male) Study Quality | Intervention (n) vs Comparator (n) Findings |
|--|---|
| Online Modules | |
| Christensen et al. (2014) ¹¹ RCT N=170 (54% male) Poor | Web-based modules completed in clinic (n=92) vs Control (n=78) <u>Retention in treatment</u> <ul style="list-style-type: none"> • Hazard of dropout, overall: CG: HR=2.12, 95% CI, 1.17 to 3.83 • Hazard of dropout, treatment-naïve: CG: HR 1.15, 95% CI, .53 to 2.51 • Hazard of dropout, previously treated: CG: HR = 6.57, 95% CI, 1.92 to 22.45 • Treatment completion, overall: Modules: 80.4% vs CG: 64.1%, OR=2.30, 95% CI, 1.15 to 4.60 • Treatment completion, treatment-naïve: Modules: 72.7% vs CG 70.3%, OR = 1.13, 95% CI .45 to 2.84 • Treatment completion, previously treated: Modules: 91.9% vs CG: 58.5%, OR= 8.03, 95% CI, 2.12 to 30.47 <u>Addiction Severity Index</u> <ul style="list-style-type: none"> • Composite score across time, between groups: no statistical detail reported; P = .24 <u>Abstinence</u> <ul style="list-style-type: none"> • Longest continuous abstinence, overall: Modules 55 days, SD = 26.2 vs CG: 49.5 days, SD = 30.5, Effect size = 5.5, 95% CI, -3.2 to 14.2) • Longest continuous abstinence, treatment-naïve: Modules: 51.0 days, SD = 27.5 vs CG: 53.5, SD = 31.8; Effect size = -2.5, 95% CI, -15.3 to 10.3 • Longest continuous abstinence, previously treated: Modules: 61.1 days, SD = 23.1 vs CG: 46, SD = 29.5; Effect size = 15.1, 95% CI, 3.2 to 27.0 • Total abstinence, overall: Modules: 67.1 days, SD = 19.3 vs CG: 57.4 days, SD = 28.0; Effect size = 9.7, 95% CI, 2.3 to 17.2 • Total abstinence, treatment-naïve: Modules: 63.4 days, SD = 22.5 vs CG: 60.1 days, SD = 27.7; Effect size = 3.2, 95% CI, -7.7 to 14.2 • Total abstinence, previously treated: Modules: 72.6 days, SD = 11.4 vs CG: 54.8 days, SD = 28.3; Effect size = 17.8, 95% CI, 8.2 to 27.4 |

Table B2. Findings of included studies (*continued*)

| Author (Year) | Intervention (n) vs Comparator (n) |
|---|---|
| Study Design | Findings |
| N (% male) | |
| Study Quality | |
| Videoconference-delivered Counseling | |
| King et al. (2014) ¹⁶ | eGetgoing (web-based videoconferencing) individual counseling (n=50) vs In-person counseling (n = 35) |
| RCT | <u>Helping Alliance Questionnaire II (quality of therapeutic alliance)</u> |
| N = 85 (44% male) | <ul style="list-style-type: none"> • Patient-rated: eGetgoing: Mean = 5.4, SD = .70 vs in-person: Mean = 5.4, SD = .48; P = .91 • Therapist-rated: eGetgoing): Mean = 5.2, SD = .50 vs in-person: Mean = 5.1, SD = .40; P = .49 |
| Poor | <u>Attendance</u> |
| | <ul style="list-style-type: none"> • eGetgoing: Mean = 7.3 sessions, SD = 2.49 vs in-person: Mean = 6.1 sessions, SD = 3.30; P = .169 |
| | <u>Satisfaction with treatment (Client Satisfaction Questionnaire)</u> |
| | <ul style="list-style-type: none"> • At 12 weeks: eGetgoing: Mean = 3.8, SD = .31 vs in-person: Mean = 3.6, SD = .52; P = .207 |
| | <u>Positive urine drug screen</u> |
| | <ul style="list-style-type: none"> • eGetgoing: Mean = 11% (SD = .27) vs in-person: Mean = 9% (SD = .16); P = .831 |

Abbreviations. CBT: cognitive behavioral therapy; CBT-IC: cognitive behavioral therapy – internal cues; CG: control group; CI: confidence interval; HR: hazard ratio; MI-G: motivational interviewing – group; MI-I: motivational interviewing – individual; NR: not reported; NSD: no significant difference; RCT: randomized controlled trial; SD: standard deviation; SUD: substance use disorder; TAU: treatment as usual; UDS: urine drug screen.

About the Center for Evidence-based Policy and the Medicaid Evidence-based Decisions Project

The Center for Evidence-based Policy (Center) is recognized as a national leader in evidence-based decision making and policy design. The Center understands the needs of policymakers and supports public organizations by providing reliable information to guide decisions, maximize existing resources, improve health outcomes, and reduce unnecessary costs. The Center specializes in ensuring that diverse and relevant perspectives are considered and appropriate resources are leveraged to strategically address complex policy issues with high-quality evidence and collaboration. The Center is based at Oregon Health & Science University in Portland, Oregon.

The Medicaid Evidence-based Decisions Project (MED) is housed at the Center. Its mission is to create an effective collaboration among Medicaid programs and their state partners for the purpose of making high-quality evidence analysis available to support benefit design and coverage decisions made by state programs. Further information about MED and the Center is available at <http://centerforevidencebasedpolicy.org/>.

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