

## Review

# Patient and provider experiences with opioid use disorder care delivered via telehealth: A systematic mixed-studies review

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## ABSTRACT

**Introduction:** Since the onset of the COVID-19 pandemic and loosening of some opioid use disorder (OUD) treatment regulations in the U.S. and Canada, there has been a rapid rise in the use of telehealth for buprenorphine induction, maintenance, and counseling (tele-bupe). Previous reviews highlight that tele-bupe can expand access to OUD care and improve treatment retention, but none to date have synthesized patient and clinician experiences with and perceptions of this care.

**Objective:** This review synthesized findings from quantitative, qualitative, and mixed-methods studies that examined patient and provider experiences with tele-bupe. We assessed the perceived effectiveness and acceptability of this treatment modality.

**Methods:** Our systematic review followed PRISMA 2020 guidelines. In July 2023, we searched six databases using keywords 'telehealth AND opioid use disorder' (and related terms) for papers published in English. Papers were eligible for inclusion if they reported findings about patient or provider experiences. Two reviewers screened studies for inclusion; 40 studies were included. We used a data-based convergent synthesis design to extract and synthesize findings, and the Mixed-Methods Appraisal Tool to appraise studies.

**Results:** Patients and providers hold generally positive views of tele-bupe and most support its continued use in some form, citing multiple benefits, including accessibility and convenience. Most studies also identified barriers to tele-bupe, including technological challenges. Patients and providers differed in how they thought telehealth affects the clinical relationship, with providers expressing more concern about rapport-building and patients stating that being in their own environments during visits facilitated comfort and openness. The findings also suggest that providers are conflicted about when and for whom tele-bupe is appropriate.

**Conclusion:** Overall, both patients and providers view tele-bupe favorably; however, providers are conflicted about the patients and situations for which it is appropriate, which may lead to inequities in who is offered this form of care.

## 1. Introduction

Opioid deaths in the United States have been rising since the 1990s and have increased dramatically since the 2010s (CDC, 2023). These deaths are the most visible manifestation of what has been widely referred to as an "overdose crisis," and have drawn substantial attention as a crisis of public health and a source of great human suffering. The COVID-19 pandemic deepened vulnerabilities experienced by people

who use drugs and further constrained access to care that might reduce opioid-related harms (Bartholomew et al., 2020; Friedman et al., 2021; Volkow, 2020). In 2021, fatal overdoses, which had already reached record levels before the pandemic, surpassed 100,000 per year in the United States (Ahmad et al., 2024; CDC, 2021; Planalp and Stewart, 2023). In Canada, ~8000 people died of an opioid overdose in 2021, the highest death toll from overdoses since data collection began in 2016 (Fischer, 2023).

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Despite the effectiveness of medications for opioid use disorder (MOUD) in treating OUD and decreasing risk of overdose, only a minority of those who could benefit currently receive treatment. Gaps between treatment need and capacity persist across the United States (Jones et al., 2015; Kassin et al., 2006; Krawczyk et al., 2022); in 2019, ~87 % of those who might have benefited from treatment with medications did not receive it (Krawczyk et al., 2022). Many barriers prevent people from seeking or remaining in treatment, including geographic distance and lack of adequate transportation; financial barriers and insurance status; provider and health system stigma against people who use drugs; work and caregiving obligations; scheduling challenges, and lack of appointment availability (Hutchison et al., 2023; Lister et al., 2020; Parish et al., 2023; Sharma et al., 2017). Treatment disparities exist along racial, geographic, and socioeconomic lines (Hutchison et al., 2023; Sharma et al., 2017; Wu et al., 2016) with those who are already the most socially and economically vulnerable to negative outcomes having the least access to effective treatment.

While telehealth for OUD treatment with buprenorphine (tele-bupe) could potentially help mitigate some of these barriers and increase access to care, its use before the COVID-19 pandemic was relatively limited. The Ryan Haight Online Pharmacy Consumer Protection Act of 2008 required in-person assessments for initial prescriptions of controlled substances, including buprenorphine, making fully remote MOUD treatment impossible in the U.S. (U.S. Department of Justice Drug Enforcement Administration, 2018). In March 2020, however, these requirements were temporarily lifted, enabling buprenorphine induction as well as maintenance via telehealth to avoid the spread of COVID-19 (U.S. Department of Justice Drug Enforcement Administration, 2020). While these regulatory changes were intended to last only until the end of the COVID-19 Public Health Emergency (Day 2023), they have since been temporarily extended twice, with the current extension in effect until Dec. 31, 2024 (U.S. Department of Justice Drug Enforcement Administration., 2023).

In October 2020, Health Canada issued class exemptions to the *Controlled Drugs and Substances Act* (CDSA) under subsection 56(1), which will remain active until September 2026, and loosened restrictions around prescribing, dispensing, and providing controlled substances to patients (Saxe, 2020). The federal government also formed the Canadian Research Initiative in Substance Misuse (CRISM), which issued a national guidance document on the use of telehealth for addiction treatment (Bruneau et al., 2020). While medical services in Canada are regulated and managed at the provincial level, national guidelines inform provincial practices; the province of Quebec, for example, updated their own guidelines on telehealth and OUD to reflect national guidance, relaxing certain restrictions and encouraging the use of telehealth for both initiation and maintenance of MOUD (Høj et al., 2023).

This new regulatory flexibility has meant that over the past few years, many more patients and providers in the U.S. and Canada gained experience with tele-bupe, and new virtual platforms for OUD treatment have emerged. While this changed technological and regulatory environment may remove certain barriers to care, it may also reinforce certain inequalities between those who have the necessary resources to access it and those who do not (Eaves et al., 2020; Netherland and Hansen, 2017).

Telehealth seems poised to become a common and enduring modality of OUD treatment. Understanding its possibilities and potential limitations is critical to ensuring high quality and equitable care. The body of evidence on the use of tele-bupe is growing (Chan et al., 2022; Cole et al., 2021; Guillen et al., 2022; Mahmoud et al., 2022; Pham et al., 2023; Tay Wee Teck et al., 2023). Accumulating evidence suggests that tele-bupe can improve patient retention (Hammerslag et al., 2023; Williams et al., 2023) and access (Pham et al., 2023). While previous reviews highlight the potential for tele-bupe to expand access to OUD care and improve retention rates, none to our knowledge have assessed evidence regarding patient and clinician experiences with and

perceptions of this care—vital to ensure that models address the needs and preferences of patients and providers. In this systematic mixed-studies review, we synthesized findings from quantitative, qualitative, and mixed-methods studies from the U.S. and Canada that examine patient and provider experiences with buprenorphine treatment via telehealth.

## 2. Methods

### 2.1. Research design

We conducted a systematic mixed studies review (Pluye and Hong, 2014) using a data-based convergent synthesis design (Hong et al., 2017), following PRISMA 2020 guidelines (Page et al., 2021). This review method involves analyzing all studies with the same synthesis method and presenting findings together. In this case, numeric findings from quantitative studies were transformed into themes and all findings were synthesized and presented qualitatively (Pluye and Hong, 2014). We used this design to include a diverse group of studies of patient and provider experiences with tele-bupe; although studies exploring experiences are often conducted qualitatively, we included studies that measured satisfaction and other experience-related outcomes via numerical scales.

### 2.2. Search methods

We searched PubMed, Scopus, CINAHL, Web of Science, PsycINFO and the British Nursing Index using the search terms ‘telehealth,’ ‘telemedicine,’ ‘telepsychiatry,’ ‘opioid use disorder,’ ‘substance use disorder,’ ‘suboxone,’ ‘buprenorphine,’ and ‘medication assisted treatment’ for papers published in English. We included qualitative, quantitative, and mixed-methods data-based peer-reviewed studies that focused on patient or provider experiences with telehealth for OUD and were published between 2013 and 2023. Papers were eligible for inclusion if they took place in the United States or Canada, included data on buprenorphine treatment, and were primarily about the treatment of opioid use disorder. Studies were excluded if they measured only outcomes unrelated to subjective experiences (e.g. retention in treatment, relapse rate), did not focus on telehealth, only addressed methadone treatment (because methadone for OUD treatment cannot be provided solely via telehealth in the United States), or primarily studied other related conditions, like HCV or HIV. All studies were screened for inclusion by two reviewers at each stage, with consensus reached on the final list of included studies. See Fig. 1 for PRISMA flow diagram and Table 1 for included studies.

### 2.3. Quality appraisal

All included studies (Table 1) were appraised for quality using the Mixed Methods Appraisal Tool (MMAT) (Hong et al., 2018) which is specifically designed for systematic mixed studies reviews, and provides a framework for assessing study quality based on descriptive assessment criteria. We used the MMAT to separately assess the qualitative (n = 25), quantitative descriptive (n = 11), and mixed-methods (n = 4) research papers included in our review. The quality assessment was conducted independently by two reviewers, and consensus was reached on final appraisal results. The results of this appraisal can be found in Tables 2, 3, and 4.

### 2.4. Data synthesis and analysis

Two reviewers carefully read all included studies in their entirety to identify initial themes and findings. In alignment with the data-based convergent synthesis design (Hong et al., 2017), findings from all studies were transformed into qualitative findings, with quantitative findings transformed into themes, rather than numerical data. These

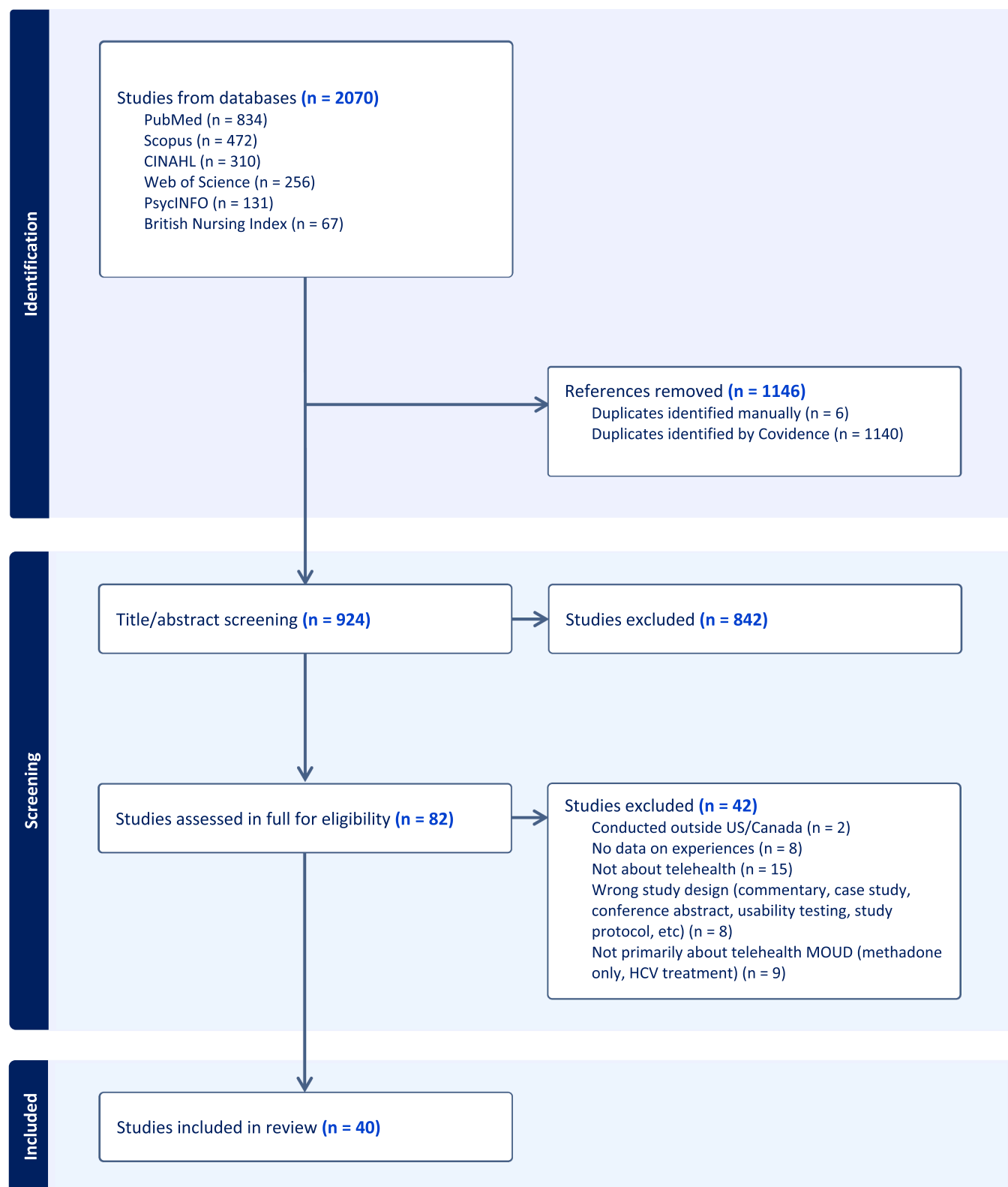


Fig. 1. PRISMA diagram.

initial themes were then grouped into core themes, and all studies were independently coded by both reviewers. Consensus was reached on a final set of themes, synthesizing both qualitative and quantitative study findings.

### 3. Results

#### 3.1. Search outcome

Our initial search yielded 2070 studies: 834 from PubMed, 472 from Scopus, 310 from CINAHL, 256 from Web of Science, 131 from

**Table 1**

Table of included studies.

	Author	Objective	Design	Sample	Setting
1	Aronowitz et al. (2021)	Explore low-barrier, harm-reduction oriented OUD treatment provider experiences with telehealth during the COVID–19 pandemic.	Qualitative: semi-structured interviews	N = 22; OUD clinicians and care team staff	Low-barrier, harm reduction oriented outpatient OUD programs in Philadelphia
2	Bailey et al. (2023)	Examine patient characteristics and care team decision-making associated with trends in OUD visit type (in-person vs. telehealth) following initial COVID–19 restrictions.	Mixed methods: retrospective chart review, semi-structured interviews	N = 781 OUD patients and 10 care team staff	Safety net primary care, rural health clinics, United States
3	Beetham et al. (2022)	Assess how preferences and practices regarding telehealth have evolved during the COVID–19 pandemic for physicians who provide OUD treatment.	Quantitative: survey	N = 1053; OUD clinicians	National online survey, United States
4	Caton et al. (2021)	Examine changes in medical and behavioral health appointment frequency, visit type, and management of patients with OUD in response to COVID–19.	Quantitative: survey	N = 338; OUD clinicians and care team staff	Primary care clinics in California
5	Caulfield (2021)	Ethnographically explore the experiences of people who use drugs and seek treatment for opioid use disorder (OUD) with telehealth during the COVID–19 pandemic	Qualitative: ethnography	N = 14; PWUD, community activists, OUD clinicians	New York State
6	Cooke et al. (2023)	Assess the benefits and challenges of telehealth for management of chronic non-cancer pain, OUD, and multi-morbidity in primary care, safety net clinical systems.	Qualitative: semi-structured interviews, ethnographic check-ins	N = 22 chronic pain patients and 7 primary care providers	Urban safety net primary care, San Francisco Bay Area
7	Corneli et al. (2022)	Assess the acceptability and feasibility (from the patient perspective) of PARTNER UP, a telemedicine-based program to provide people who inject drugs (PWID) with access to both PrEP for HIV prevention and MOUD.	Qualitative: interviews	N = 11; PWID	Syringe service programs (SSPs) in North Carolina
8	Day et al. (2022)	Describe preliminary evidence of acceptability, treatment retention, and outcomes for clients in virtual opioid dependency program (VODP) model.	Quantitative: Retrospective chart review	N = 440; VODP patients	Alberta Health Services (AHS) telehealth sites, Canada
9	Dir et al. (2022)	Explore issues related to SUD/OUD treatment among individuals involved in the justice system and the impacts of COVID–19 on these service systems.	Qualitative: semi-structured interviews	N = 38; justice system personnel and SUD/OUD clinicians	Justice Community Innovation Opioid Network (JCOIN) "research hubs" in Illinois, Indiana, and Kentucky
10	Greenberg et al. (2024)	Examine psychological components of telehealth shared medical appointments (SMA) for buprenorphine prescribing to learn about the benefits and drawbacks of this treatment model.	Qualitative: semi-structured interviews	N = 10; dual diagnosis patients with OUD	Addiction psychiatry clinic, United States
11	Harrington et al. (2023)	Identify adaptations and barriers to MOUD access that COVID–19 exacerbated or created, and document new elements that staff wish to sustain as COVID–19 recedes.	Qualitative: semi-structured interviews, focus groups	N = 29; jail staff who provide OUD treatment	Western Massachusetts jails
12	Hills et al. (2022)	Examine changes in service delivery due to the pandemic, challenges encountered in rapid adaptation, and initial impressions of which changes might be sustainable over time	Qualitative: structured interviews	N = 20; SUD/HIV service providers, staff, and other stakeholders	Pinellas County Opioid Task Force agencies/programs, Florida
13	Huskamp et al. (2022)	Understand clinician use of and comfort level with using telemedicine to initiate patients on medication for opioid use disorder	Quantitative: survey	N = 602; OUD clinicians	National online survey, United States
14	Huskamp et al. (2023)	Understand OUD clinician views of and preferences regarding telemedicine.	Quantitative: survey	N = 425; OUD clinicians	National online survey, United States
15	Kang et al. (2021)	Identify and document treatment experiences among patients with OUD in the context of the rapid move from in person to telephone counseling due to COVID–19	Quantitative: survey	N = 237; OUD patients	CODAC Behavioral Healthcare, Outpatient opioid treatment program (OTP) in Rhode Island
16	Kang et al. (2022)	Explore patient-level barriers and their impact on patient experiences as it relates to telephone counseling adjunct to MOUD treatment.	Quantitative: survey	N = 264; OUD patients	CODAC Behavioral Healthcare, Outpatient OTP in Rhode Island
17	Krawczyk et al. (2022)	Understand how opioid treatment programs adapted operations to the COVID–19 pandemic and new federal regulations around methadone and buprenorphine.	Quantitative: survey	N = 47; OTP program directors	OTPs in Pennsylvania
18	Lockard et al. (2022)	Explore what is gained and lost in virtual patient encounters for patients with OUD at a low-threshold, addiction treatment clinic	Qualitative: semi-structured interviews	N = 19; OUD patients	Low-barrier addiction treatment clinic, Portland, Oregon
19	Lott et al. (2023)	Assess clinicians' beliefs about and experiences delivering MOUD in general healthcare clinics during COVID–19	Qualitative: interviews	N = 30; VA OUD clinicians	21 VA clinics, United States
20	Martin et al. (2021)	Examine OUD counselors' experiences with telephone counseling during the COVID–19 pandemic	Mixed methods: survey, open-ended questions	N = 42; OUD counselors	7 OTP clinics, Rhode Island

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Table 1 (continued)

	Author	Objective	Design	Sample	Setting
21	Mattocks et al. (2022)	Understand provider perspectives on MOUD care delivery using telemedicine.	Qualitative: semi-structured interviews	N = 23; VA OUD clinicians	Veterans Affairs (VA) medical centers in 8 states, United States
22	McCray et al. (2022)	Understand and identify key factors that impact usage and accessibility of OUD treatment via telehealth for rural African American residents with disabilities.	Qualitative: focus groups	N = 12; OUD counselors/therapists	Rural areas in the United States
23	Meyerson et al. (2022)	Understand patient experience of federal regulatory changes governing MOUD access in Arizona during the COVID-19 pandemic.	Qualitative: community-based participatory action research (CBPAR), field interviews	N = 131; OUD patients	Arizona
24	Moore et al. (2021)	Describe the experiences of adults with OUD receiving buprenorphine in a nurse-practitioner facilitated telehealth program.	Qualitative: semi-structured interviews	N = 15; OUD patients	Alberta Health Services (AHS) telehealth sites, Canada
25	Rakita et al. (2016)	Assess the acceptability and quality of a web-based telemedicine platform in the treatment of opioid use disorder at TrueNorth Medical Centre.	Quantitative: survey, open-ended questions	N = 30; OUD patients	TrueNorth Medical Centre, addiction treatment clinic, Toronto, Canada
26	Riedel et al. (2021)	Understand clinician use of and opinions about telemedicine for OUD during the COVID-19 pandemic.	Quantitative: survey	N = 602; OUD clinicians	National online survey, United States
27	Saloner et al. (2022)	Describe changing needs, substance use, and patterns of treatment among people with recent treatment experience, and characterize treatment adaptations through telehealth and take-home methadone.	Quantitative: phone survey	N = 587; clients of SUD treatment and harm reduction programs	21 SUD treatment and harm reduction programs in DC, Maine, Maryland, Michigan, New Jersey, New Mexico, New York, Pennsylvania, Tennessee, and West Virginia
28	Sousa et al. (2022)	Document patient experiences with fully virtual OUD care	Qualitative: semi-structured interviews	N = 20; OUD patients	Bicycle Health (telehealth only platform for MOUD)
29	Sung et al. (2022)	Characterize adaptations used to provide MOUD and factors associated with desire to continue virtual visits post-COVID-19 among OUD providers.	Mixed methods: survey, open-ended questions. Thematic analysis	N = 797; OUD clinicians	National online survey, United States
30	Textor et al. (2022)	Assess how efforts to increase access to buprenorphine via telehealth are implemented by prescribers and pharmacists and experienced by patients.	Qualitative: interviews, ethnography	N = 19 OUD patients, 24 OUD clinicians/care staff, and 10 pharmacists	OUD clinics, community pharmacies, encampments, in PA and CA
31	Tofighi et al. (2023)	Assess buprenorphine provider and administrator perceptions and experiences in offering tele-buprenorphine during the COVID-19 pandemic.	Mixed methods: semi-structured interviews, survey	N = 13 OUD treatment physicians, 2 NPs and 1 administrator	Telemedicine based OUD treatment, USA
32	Treitler et al. (2022)	Understand changes in treatment providers' care during COVID-19, provider experiences with the adaptations, and perceptions of which changes should be sustained long-term.	Qualitative: semi-structured interviews	N = 20; OUD clinicians	OTP/OBAT sites, New Jersey
33	Ude et al. (2023)	Understand how the COVID-19 pandemic affected service delivery at Health Hubs and other SSPs in New York State in 2020.	Qualitative: semi-structured interviews	N = 6; SSP management staff	SSPs, New York State
34	Uscher-Pines et al. (2020)	Explore how health centers across the U.S. are using telehealth for OUD treatment as well as reasons for nonadoption	Qualitative: semi-structured interviews	N = 22; health center CEOs and behavioral health department leaders	Federally qualified health centers and Community mental health centers, United States
35	Uscher-Pines et al. (2020)	Describe how clinicians used telemedicine for OUD in conjunction with in-person care, barriers encountered, and implications for quality of care.	Qualitative: semi-structured interviews	N = 18; OUD clinicians	18 clinics in New York, Florida, Indiana, Pennsylvania, Arizona, Idaho, Louisiana, Michigan, Ohio, Washington
36	Uscher-Pines et al. (2023)	Report changes over time in telemedicine use, clinicians' attitudes, and digital equity strategies.	Quantitative: longitudinal survey	N = 425; OUD clinicians	National online survey, United States
37	Walters et al. (2022)	Examine the experiences of people who use drugs in relation to MOUD during the early COVID-19 pandemic.	Qualitative: semi-structured interviews	N = 37 PWUD and 18 OUD clinicians, care staff, and government regulators	Northeastern US
38	Walters et al. (2022)	Examine the impact of COVID-19 in its early stages on an OUD support services program in a non-profit located in rural eastern Kentucky.	Qualitative: semi-structured interviews	N = 19; non-profit service recipients, program coordinators, and business vendors	Kentucky Access to Recovery (KATR): non-profit OUD support services program in rural eastern Kentucky
39	Wenger et al. (2021)	Explore challenges faced by SSPs during the COVID-19 pandemic	Qualitative: interviews	N = 18; SSP leadership, staff, and volunteers	18 SSPs, United States
40	Zhen-Duan et al. (2022)	Investigate how the COVID-19 pandemic impacted low-income individuals with SUD in NYC during the beginning of the pandemic.	Qualitative: semi-structured interviews	N = 20; patients of color with OUD	New York City

PsycINFO and 67 from the British Nursing index (see PRISMA diagram, Fig. 1). After removing duplicates (n = 1146), 924 studies were identified for initial review. Based on an initial screening of titles and abstracts, an additional 80 studies were excluded. The remaining 82 studies underwent full-text review and were carefully assessed for

relevance. An additional 42 studies were excluded through this process, yielding a total of 40 included studies in our final sample.

The final sample included 11 quantitative studies, 25 qualitative studies, and 4 mixed-methods studies. Twenty-two studies sampled providers (clinicians, staff, leadership, pharmacists), 12 sampled

**Table 2**

Mixed methods appraisal tool–quantitative descriptive studies (Hong et al., 2018).

Author	Are there clear research questions?	Do the collected data allow to address the research questions?	Is the sampling strategy relevant to address the research question?	Is the sample representative of the target population?	Are the measurements appropriate?	Is the risk of nonresponse bias low?	Is the statistical analysis appropriate to answer the research question?
Beetham et al. (2022)	Y	Y	Y	A national survey of DATA-waivered physicians: relied on voluntary participation based on email response to a survey, 8 % response rate; only MDs included	Y	Y	Y
Caton et al. (2021)	Y	Y	Y	Clinicians at 57 diverse primary care clinics in CA (includes all kinds of professionals)	Y	Y	Y
Day et al. (2022)	Y	Y	Y	patients in virtual care across Alberta	Y	Y	Y
Huskamp et al. (2022)	Y	Y	Y	A US national survey via WebMD/Medscape) of clinicians (primary care providers, psychiatrists, nurse practitioners and physician assistants) via WebMD/Medscape's online panel of 2.5 million clinicians. Invitation sent to all psychiatrists in the panel and a random sample of primary care physicians, nurse practitioners, and physician assistants.	Y	Y	Y
Huskamp et al. (2023)	Y	Y	Y	A national sample via WebMD/Medscape	Y	Y	Y
Kang et al. (2022)	Y	Y	sampling strategy unclear	A quality improvement project at CODAC Behavioral Healthcare (the largest outpatient OTP in the state of Rhode Island) to evaluate the experience of individualized telephone counseling for patients, counselors, and providers	Y	unknown	Y
Krawczyk et al. (2022)	Y	Y	Y	Contacted the clinical directors of 103 OTPs licensed by the Pennsylvania Department of Drug and Alcohol Programs	Y	47 out of 103 OTPs responded; "responding OTPs may have unique features that are not representative of nonresponding OTPs across Pennsylvania. For example, approximately a quarter of nonresponding OTPs were not-for-profit, compared to 36 % of respondents. Response rate varied by question" (pg. 651)	Y
Rakita et al. (2016)	Y	Y	Y	A single clinic in Toronto; all patients approached for study	Y	"All patients of TrueNorth Medical Centre who met inclusion criteria were approached and introduced to the study. Indeed, taking that into account and the high response rate (see "Results"), the current sample is representative of the perceptions patients adopt about TM at TrueNorth Medical Centre"; "A total of 91 % (30/33) of the patients approached consented to take part in the study" (pg. 2, 4)	Y
Riedel et al. (2021)	Y	Y	Y	A US national sample via WebMD/Medscape	Y	Y	Y

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Table 2 (continued)

Author	Are there clear research questions?	Do the collected data allow to address the research questions?	Is the sampling strategy relevant to address the research question?	Is the sample representative of the target population?	Are the measurements appropriate?	Is the risk of nonresponse bias low?	Is the statistical analysis appropriate to answer the research question?
Saloner et al. (2022)	Y	Y	Y	"Study participants were recruited from a convenience sample of 21 drug treatment and harm reduction programs from DC, Maine, Maryland, Michigan, New Jersey, New Mexico, New York, Pennsylvania, Tennessee, and West Virginia"; "Sites served diverse populations, but were geographically skewed toward programs serving individuals in northeastern urban communities... compared to a nationally representative sample of people in substance use disorder treatment, the study sample was more likely to be older, African American, and to use opioids" (pg. 2)	Y	Participating clinics and patients might differ systematically from non-participants	Y
Uscher-Pines et al. (2023)	Y	Y	Y	A US national sample via WebMD/Medscape	Y	"The second wave included 425 respondents (a 70.6 % retention rate). Sample attrition was unrelated to telemedicine use; however, analyses used nonresponse weights to account for attrition." (pg. 2)	Y

patients, and 6 included both patients and providers. There was significant heterogeneity in study populations, especially among providers (e.g. OUD clinicians, jail staff, HIV treatment providers, etc.) and settings (e.g. harm reduction programs, VA clinics, primary care, OTPs, telehealth-only platforms), reflecting the range of populations in need of OUD care and diverse contexts in which it is currently being delivered. Three of the included studies took place in Canada, and the remaining 37 took place in the United States. All but one study was published between 2020 and 2023, after the onset of the COVID-19 pandemic.

### 3.2. Quality appraisal outcome

Based on the respective MMAT criteria for qualitative, quantitative, and mixed-methods studies, the 40 studies included in the review were determined to be of good quality; all included studies across the three categories met most or all assessment criteria. The MMAT does not generally involve calculating an overall quality rating score, relying instead on reporting detailed results for each criterion for all included studies. We provide this detailed breakdown in Tables 3, 4, and 5, along with relevant notes and explanations where appropriate. Overall, included studies were determined to be of consistently good quality, and we were able to proceed with sufficient confidence in our analysis and synthesis of study results.

### 3.3. Thematic results

We synthesized the study results into three main themes, outlined below.

### 3.4. Overall positive views of telehealth for OUD treatment

Both patients and providers indicated generally positive opinions about telehealth for OUD treatment. Patients across studies reported high satisfaction with telehealth: 84 % of respondents in a multistate survey on opioid use disorder treatment early in the COVID-19 pandemic reported that telehealth treatment was "going pretty well," and 77 % expressed all positive experiences with telehealth (Saloner et al., 2022); a majority (63 %) of patients in a qualitative study of telehealth in low-threshold addiction treatment clinics preferred virtual to in-person visits, or a combination of both (21 %) (Lockard et al., 2022); over three quarters of patients in another qualitative interview study preferred tele-bupe to in-person care, with almost all rating their satisfaction as a 4 or 5 on a 1–5 scale (Souza et al., 2022). More than 90 % of patients in an OUD treatment program in Alberta expressed high satisfaction with telehealth (Day et al., 2022).

Providers also provided overarching positive assessments: 69 % of counselors surveyed in a mixed-methods study reported that they were somewhat or very satisfied with telehealth counseling (Martin et al., 2021), and most respondents in a large national survey of buprenorphine-prescribing physicians found telehealth more effective than they had expected, with 85 % in favor of permanently extending the pandemic flexibility to use telehealth to treat OUD (Beetham et al., 2022). Providers largely reported that telehealth was at least as effective as in-person care: VA clinicians in a qualitative evaluation of telehealth for MOUD during the early pandemic reported "minimal impact" on the overall quality of care offered (Lott et al., 2023), and most (62.5 %) OUD clinicians in a national survey indicated that telehealth was as effective as in-person treatment (Riedel et al., 2021). Providers across studies noted that treatment efficacy generally did not decrease with the use of telehealth, and supported the continued use of telehealth in some form

**Table 3**  
Mixed methods appraisal tool–qualitative studies (Hong et al., 2018).

Author	Are there clear research questions?	Do the collected data allow to address the research questions?	Is the approach appropriate to answer the research question?	Are the data collection methods adequate to address the research question?	Are the findings adequately derived from the data?	Is the interpretation of results sufficiently substantiated by data?	Is there coherence between data sources, collection, analysis and interpretation?
Aronowitz et al. (2021)	Y	Y	Y	Y	Y	Y	Y
Caulfield (2021)	Y	Y	Y	Y	Y	Y	Y
Cooke et al. (2023)	Y	Y	Y	Y	Y	Y	Y
Corneli et al. (2022)	Y	Y	Y	Y	Y	Y	Y
Dir et al. (2022)	Y	Y	Y	Y	Y	Y	Y
Greenberg et al. (2024)	Y	Y	It is unclear how/why the study site was chosen; lists a lot of theoretical approaches/methods but unclear how they influence analysis	Y	Y	Y	Y
Harrington et al. 2023	Y	Y	Y	Y	Y	Y	Y
Hills et al. (2022)	Y	Y	All interviewees were members of Task Force, includes sheriffs office as well as service providers	Y	Y	Y	Y
Kang et al. (2021)	Y	Y	Y	Y	Y	Y	Y
Lockard et al. (2022)	Y	Y	Y	Y	Y	Y	Y
Lott et al. (2023)	Y	Y	VA clinicians only	Y	Y	Y	Y
Mattocks et al. (2022)	Y	Y	VA clinicians only	Y	Y	Y	Y
McCray et al. (2022)	Y	Y	Y	Y	Y	Y	Y
Meyerson et al. (2022)	Y	Y	Y	Y	Y	Y	Y
Moore et al. (2021)	Y	Y	Y	Y	Y	Y	Y
Sousa et al. (2022)	Y	Y	Y	Y	Y	Y	Y
Textor et al. (2022)	Y	Y	Y	Y	Y	Y	Y
Treitler et al. (2022)	Y	Y	Y	Y	Y	Y	Y
Ude et al. (2023)	Y	Y	Y	Y	Y	Y	Y
Uscher-Pines et al. (2020)	Y	Y	Y	Y	Y	Y	Y
Uscher-Pines et al. (2020)	Y	Y	Y	Y	Y	Y	Y
Walters et al. (2022)	Y	Y	Y	Y	Y	Y	Y
Walters et al. (2022)	Y	Y	Y	Y	Y	Y	Y
Wenger et al. (2021)	Y	Y	Y	Y	Y	Y	Y
Zhen-Duan et al. (2022)	Y	Y	Y	Y	Y	Y	Y

even after the end of the emergency phase of the COVID-19 pandemic (Beetham et al., 2022; Hills et al., 2022; Riedel et al., 2021; Sung et al., 2022; Treitler et al., 2022; Uscher-Pines et al., 2020).

Both patients and providers reported numerous advantages associated with telehealth versus in-person care. The most commonly cited benefits of tele-bupe were increased convenience, flexibility, and accessibility for patients: it is widely experienced as a “*less burdensome way for patients to access medication*” (Krawczyk et al., 2022). Convenience and ease of access were widely reported across studies of both patients (Kang et al., 2021, 2022; Zhen-Duan et al., 2022) and providers

(Lott et al., 2023; Martin et al., 2021; Sung et al., 2022; Uscher-Pines, Raja, et al., 2020; Uscher-Pines et al., 2020). These studies emphasize the benefits of eliminating the need for transportation to clinics, especially for patients in rural or underserved areas, or those who experience other transportation barriers (Dir et al., 2022; Kang et al., 2021; McCray et al., 2022; Sung et al., 2022); reaching populations with otherwise limited access to treatment (J. E. Walters et al., 2022); and reducing the challenges of balancing treatment with work, childcare, and other core obligations (Lockard et al., 2022; Moore et al., 2021; Treitler et al., 2022). As one participant in a qualitative study of an OUD telehealth



**Table 4**  
Mixed methods appraisal tool–mixed methods studies (Hong et al., 2018).

Author	Are there clear research questions?	Do the collected data allow to address the research questions?	Is there an adequate rationale for using a mixed methods design to address the research question?	Are the different components of the study effectively integrated to answer the research question?	Are the results adequately brought together into overall interpretations?	Are divergences and inconsistencies between quantitative and qualitative results adequately addressed?	Do the different components of the study adhere to the quality criteria of each tradition of the methods involved?
Bailey et al. (2023)	Y	Y	Y	Y	Y	Y	Y
Martin et al. (2021)	Y	Y	Y	Y	Y	Y	Y
Sung et al. (2022)	Y	Y	Y	Y	Y	Y	Y
Tofighi et al. (2023)	Y	Y	Study is labelled "mixed methods" but appears to be a qualitative study with demographic information and basic quantitative data about service provision	Study is labelled "mixed methods" but appears to be a qualitative study with demographic information and basic quantitative data about service provision	n/a	n/a	Y

program explained: *"I'm able to, to go back to living a normal life. I can stay home and take care of my toddler and I can take care of my responsibilities and still show up for this every week. Just, I mean, scheduling, my anxiety, um, finding a babysitter for appointments to go there. My husband has to work, we own our own company"* (McCray et al., 2022, p. 207). This sentiment was widely shared; one MOUD clinician in a qualitative interview-based study of telehealth during the pandemic reflected: *"I think that [telehealth] is a really big deal because there's so many socio-economic things that get in the way when people are trying to get time off work and come to an office, even just geographic barriers that aren't an issue when we're doing telehealth"* (Treitler et al., 2022, p. 4).

In addition to eliminating these logistical barriers to treatment, telehealth can improve access by avoiding other impediments to seeking care, such as the desire to avoid risky neighborhoods where treatment might be located (Tofighi et al., 2023) or where the patient will be exposed to drug use, which might be triggering (Aronowitz et al., 2021); or to avoid the risks of traveling and sitting in a waiting room during the (then especially acute, and still ongoing) COVID-19 pandemic (Uscher-Pines et al., 2020); or to mitigate a general sense of fear, stigma, or hesitancy about accessing treatment (Caulfield, 2021).

Patients perceived telehealth care as less stigmatizing than in-person treatment (Corneli et al., 2022; Lott et al., 2023; Sousa et al., 2022; Uscher-Pines et al., 2020; Wenger et al., 2021). As one participant in a qualitative study explained: *"Not having to go to a regular doctor's office or anything to get it [is a benefit]. It's actually easier this way. Because of the stigma of going to the doctor's office and things like that. You know, a lot of people don't trust them. A lot of people don't like going to them. It's a touchy subject."* (Corneli et al., 2022, p. 6). Such benefits might be especially salient for stigmatized or marginalized populations.

Telehealth may also offer benefits for provider well-being (Huskamp et al., 2023; Lott et al., 2023; Treitler et al., 2022). Most respondents in a national longitudinal survey indicated that the switch to telehealth *"had a positive impact on their work-related well-being"* (Huskamp et al., 2023, p. 2139). Some of the same convenience benefits that affect patients also affect providers: MOUD clinicians in a qualitative study in New Jersey commented on the time-saving, efficient nature of telehealth, which allowed them to save time on commutes and relieved the burden of childcare (Treitler et al., 2022).

While most research reported overall positive experiences with telehealth, one pre-pandemic study found that almost half of patients interviewed (47 %) preferred in-person appointments to telehealth (versus 20 % who preferred telemedicine), although a significant percentage of patients (33 %) indicated no preference for either (Rakita

et al., 2016). Some studies found that while telehealth was necessary and helpful during the early pandemic, in-person care remained preferable overall (Krawczyk et al., 2022; Riedel et al., 2021).

### 3.5. Effects on the clinician-patient relationship

Telehealth changes the clinician-patient relationship, shifting the dynamics of rapport, the texture of communication, and what information about patients is readily available to clinicians. Studies found that telehealth offered several benefits and improvements to rapport-building compared with in-person care. Patients expressed that they felt safer and more comfortable speaking openly with clinicians from the comfort of their own homes (Corneli et al., 2022; Kang et al., 2021; Lockard et al., 2022; Moore et al., 2021; Uscher-Pines et al., 2020). One participant in a qualitative study stated: *"I find it easier to talk to people like, like this, (with telehealth)...it just feels safer to me than doing it in person. A doctor's office is so clinical and I feel so out of my own environment and out of my own like element, you know, you know, so when I can be in my own kind of space, I feel more comfortable talking about myself"* (Moore et al., 2021, p. 208). In another qualitative study of adults receiving tele-buprenorphine, over three quarters of interviewees described tele-buprenorphine as more "patient-centered" than in-person care, reporting that providers were more responsive and respectful, and that treatment was less "intimidating" (Sousa et al., 2022).

Telehealth may also influence rapport by giving clinicians more insight into their patients' lives and environments (Cooke et al., 2023; Lott et al., 2023; Mattocks et al., 2022; Treitler et al., 2022; Uscher-Pines et al., 2020). Veterans Affairs clinicians noted that tele-buprenorphine allowed them to develop a greater understanding of the home lives of their patients, observing their families, relationships, hobbies, and pets in ways that at once fostered connection and helped them understand potential challenges to managing their conditions: *"I think the biggest part is actually the relationship is so much more personal when you're in someone's home. It's almost like doing a home visit, even though you're not actually in their space"* (Mattocks et al., 2022, p. 3). Telehealth, for some providers, felt more "real" than the "fictitious world" of the exam room: as one participant in an interview study of telehealth in safety-net primary care settings noted: *"[Telehealth has] already taken down that whole construct in so many ways and allowed us to be real on the phone and say, 'Okay, now I hear your child in the background, I hear your dog in the background.' It's a more real-life picture of what our patients are dealing with"* (Cooke et al., 2023, p. 4).

Conversely, both patients and providers also discussed the ways

telehealth was worse than in-person care for building rapport, citing an impersonal feeling, challenges in building intimacy, a lack of privacy for patients, and the depersonalized nature of virtual care. Providers described missing the “personal aspect” of face-to-face care (Treitler et al., 2022, p. 5), noting that telehealth sessions felt more impersonal (Kang et al., 2022) and that virtual care reduced intimacy and trust (Ude et al., 2023) and made it harder to establish rapport (Uscher-Pines et al., 2020). Both providers (Aronowitz et al., 2021) and patients (Caulfield, 2021) expressed missing the physical connections possible with in-person care, emphasizing the lack of body language and the impossibility of giving hugs (for example, in virtual group therapy). Veterans’ Affairs clinicians discussed patient distraction during telehealth appointments as a key challenge: “We’re doing a lot of telephone appointments and people are saying ‘I can’t talk right now, I’m on the bus.’ Or ‘I’m at Stop and Shop and I can’t talk.’ And you end up in this situation like—You knew you had an appointment, what is happening here? So you have patients who don’t really conceptualize it as an appointment in the same way” (Mattocks et al., 2022, p. 4).

Patient privacy and confidentiality were also a concern, as some patients may not have a safe, private, and comfortable space to participate in audio or video telehealth sessions (Cooke et al., 2023; Kang et al., 2021, 2022; Martin et al., 2021; McCray et al., 2022). While some providers felt that telehealth offered better insight into patients’ lives, a program coordinator in a rural opioid support services program disagreed: “I enjoyed interacting with the clients. When you are seeing someone face to face, it’s a totally different dynamic. You can gauge more from people that way ... you lose a little bit of that on the phone ... what’s going on in their life...” (Walters et al., 2022, p. 6). Across and within studies, there were conflicting findings about the effects of telehealth on rapport: opioid treatment program counselors offering telephone counseling, for example, disagreed over whether telehealth improved or impeded the clinician-patient relationship (Martin et al., 2021), and patients receiving virtual care during the early pandemic disagreed over which modality was more humanizing, comfortable, and engaged (Lockard et al., 2022).

### 3.6. Telehealth for whom?

Providers expressed concerns about the use of telehealth for particular situations or patient populations. Several studies addressed the question of whether providers thought telehealth was appropriate for OUD treatment initiation rather than simply maintenance, and in general, a minority of providers supported using telehealth for induction. In a national survey of clinicians who treat OUD, 25 % of respondents used telehealth for most treatment initiations, versus 40 % who used in-person visits only, and 55.8 % felt some discomfort using telehealth with new OUD patients (Huskamp et al., 2023). In another national, longitudinal survey, only ~35 % of clinicians were comfortable using video telehealth visit for new patients (Huskamp et al., 2023). An online survey of all Pennsylvania opioid treatment programs found that only 10 % (telephone) and 25 % (video) of clinics reported using telehealth for treatment initiation, and that while 55 % of respondents supported using video visits for buprenorphine initiation, only 39 % supported doing so with audio-only telehealth visits (Krawczyk et al., 2022). A national survey of OUD providers found that telehealth was used more frequently to maintain (79 %) than to initiate (44 %) buprenorphine, and that a smaller percentage of providers reported satisfaction with using telehealth to initiate (36 %) rather than maintain (70 %) buprenorphine (Sung et al., 2022).

Some providers favored seeing new patients in person before transitioning to telehealth or avoided taking on new patients altogether (Uscher-Pines et al., 2020), while others overcame initial hesitancy and became more comfortable using telehealth for treatment initiation (Lott et al., 2023). In a study of primary care buprenorphine providers in California during the early pandemic, most remaining in-person visits were for new patients: as one provider explained, “it is too high risk and

liability is involved with new patients. We do not establish care or take new patients by telehealth or virtual visits. The risk does outweigh the reward in this case in our professional assessment and observation.” (Caton et al., 2021, p. 1000). Others, however, claimed to have become sufficiently comfortable with treatment initiation via telehealth (Caton et al., 2021).

In addition to hesitancy about initiation, providers expressed different criteria for determining the appropriateness of telehealth for specific patients. These criteria were usually based on inferences about patient stability and risk. New patients, patients with co-occurring psychiatric diagnoses, and rural-dwelling patients were less likely to be offered care via telehealth in a mixed-methods study of safety net primary care settings (Bailey et al., 2023). Clinicians regularly make subjective decisions—not based on protocols or established standards—about who is stable enough for telehealth care (Aronowitz et al., 2021). A national survey of clinicians found that while 88.9 % were comfortable using video telehealth for clinically stable patients, only 49.3 % were comfortable using video for patients who are not clinically stable (Riedel et al., 2021). Providers also expressed concern about whether telehealth is appropriate for high-risk patients, especially youth (Dir et al., 2022). Neither clinical stability nor “high-risk” status was defined in these studies. Other studies, however, suggest that the highest-risk patients may be those who would most benefit from telehealth, which may be the only way certain patients will make it to an appointment (Lockard et al., 2022), and may help retain high-risk patients in care (Tofighi et al., 2023). Clinicians with bigger caseloads of clinically unstable patients were more likely to voice comfort with telehealth, and to say they would continue to use it post-COVID (Riedel et al., 2021). Providers also worried about telehealth being more risky than in-person care; 50 % of providers in a study of Pennsylvania opioid treatment programs believed that telehealth for buprenorphine increases diversion risk and the risk of children or others accidentally ingesting the medication, and 13 % thought that telehealth increased risk of overdose for patients (Krawczyk et al., 2022).

### 3.7. Barriers remain

Studies also identified barriers and challenges to successful implementation of telehealth. Most widely discussed are technological barriers and the digital divide, including physical access to technology, knowledge of how to use it, and patient trust and comfort. Providers expressed concern over patients’ ability to access technology for telehealth (Aronowitz et al., 2021; Sung et al., 2022; Treitler et al., 2022), with specific concerns about internet connections in rural areas (Bailey et al., 2023; Walters et al., 2022). Digital literacy also poses a significant challenge, with providers noting that some patients lack sufficient technological knowledge to successfully engage in telehealth (Aronowitz et al., 2021; Cooke et al., 2023; Lott et al., 2023; Tofighi et al., 2023). These concerns were especially salient for particular populations, like older patients (Uscher-Pines, Sousa, et al., 2020) or the recently incarcerated (Dir et al., 2022). Certain populations may also harbor a historical distrust of technology (McCray et al., 2022), making participation and trust more challenging to establish.

These technological barriers, research suggests, can be addressed with digital equity strategies (Uscher-Pines et al., 2023). In a multi-state survey, 88 % of patients noted that they received clear instructions on how to use telehealth, and 92.8 % reported having a phone or internet to use (Saloner et al., 2022). In attempts to increase access to telehealth, clinics and syringe service programs offering buprenorphine distributed phones and provided access to tablets (Tofighi et al., 2023; Ude et al., 2023). Some clinicians report using telephone rather than video appointments for patients with limited digital literacy or who lack the necessary devices for video appointments (Uscher-Pines, Sousa, et al., 2020).

In addition to technological challenges, providers expressed concern about how telehealth might deprive patients of connections with other people and with other necessary services. Clinicians worried that

patients might depend on treatment for in-person connection, and that telehealth would lead to more isolation (Caulfield, 2021; Lott et al., 2023; Moore et al., 2021; Treitler et al., 2022), especially for marginalized patients and those with trauma (Mattocks et al., 2022; McCray et al., 2022). Providers also noted that telehealth patients might miss out on other adjacent supportive services (social and medical) they might have otherwise been receiving alongside in-person care. Some MOUD clinics offer basic goods and social services in addition to SUD treatment (like food, clothing, and connections to shelter or housing), and reducing or eliminating in-person visits thus also limits access to these resources (Walters et al., 2022). Providers also worried about how telehealth limits collaboration across medical teams and specialties (Caton et al., 2021; McCray et al., 2022) and makes it more difficult to assess mental status, do physical exams, or take care of some specific physical concerns (Lockard et al., 2022; Treitler et al., 2022; Uscher-Pines et al., 2020).

Providers' concerns can also arise from issues of trust and a desire to surveil patients more closely and have control over their care (Aronowitz et al., 2021; Caulfield, 2021). Providers in one interview study worried about missing physical symptoms of withdrawal and thus being unable to "detect lies about drug use or diversion" (Uscher-Pines et al., 2020, p. 5). In some cases, carceral and surveillance requirements (like urine drug testing) canceled out some of the benefits of telehealth (because they had to be done in person) and ruled out some patients for telehealth due, for example, to probation conditions (Uscher-Pines et al., 2020). The same need for trust that makes some providers suspicious of telehealth might also represent an opportunity to restore trust in patients and move away from harsh surveillance. Delivering care over telehealth necessitates trusting patients more (Caton et al., 2021; Mattocks et al., 2022); as Caton et al. report: "*Practitioners in our survey reported prescribing longer doses of their medications, significantly higher for clinics with higher OUD capabilities. This, along with decreases in urine drug screenings, may indicate renewed patient trust and prescribers prioritizing patient safety before their concerns for diversion and misuse*" (2021, p. 1003).

Tele-bupe also faces challenges from existing policy, bureaucracy, and administrative cultures. Problems emerge at pharmacies, when patients go to pick up their medications and are denied because of pharmacist suspicions about telehealth and worries over legal compliance and liability in a changing policy landscape, which can seriously impact patient and provider experiences with telehealth (Textor et al., 2022). Respondents in a study of a tele-bupe program in Alberta named pharmacy issues as the "least helpful" element of the program (Day et al., 2022). The switch to telehealth also raises concerns for providers and organizations about liability (Sung et al., 2022) and reimbursement (Tofighi et al., 2023).

Finally, telehealth may impose new administrative challenges and additional work burdens on providers. While some providers felt telehealth improved their work-life balance, others noted the downside of increased availability to patients, who might now contact providers at all hours (Caton et al., 2021; Tofighi et al., 2023; Treitler et al., 2022). As a provider at a primary care clinic explained: "*I feel like I am working harder at home, being paid less, being pushed by management to increase productivity, and trying to balance home life with children who are largely being left to fend on their own during clinic hours*" (Caton et al., 2021, p. 1002). Providers in a qualitative study reported frustration with the increase in new tasks surrounding telehealth, including helping patients use technology, insurance coverage issues (like an inability to bill for texting), and increased need for calls and check-ins with non-prescriber staff (Tofighi et al., 2023).

#### 4. Discussion

The COVID-19 pandemic forced policy changes that increased flexibility in OUD treatment delivery, including the use of telehealth for buprenorphine prescribing. Despite potential to increase access to care—which was recognized as a serious issue plaguing OUD treatment

before the COVID-19 pandemic—the Ryan Haight Act's requirement that all controlled substance inductions take place in-person seriously limited clinicians' ability to offer care via telehealth. Although clinicians could have offered telehealth to established patients, very few did. Lack of interest in offering OUD treatment via telehealth is highlighted by the dearth of articles about this topic published before 2020.

Although tele-bupe was adopted out of necessity, our findings highlight substantial satisfaction with telehealth among both clinicians and patients. Most studies in our review reported that clinicians and patients believed that tele-bupe was either as effective as or more effective than in-person care. In many cases, this was because of accessibility factors; telehealth can help address barriers related to geography, transportation, and competing responsibilities. These benefits of tele-bupe mirror the literature on telehealth generally (Hoffman, 2020; Lurie and Carr, 2018; Sundstrom et al., 2019).

While these barriers can affect anyone, their impact may be greatest on women, who disproportionately bear the burdens of childcare, elder care, and household responsibilities. Childcare was discussed in multiple studies included in this review, and the flexibility afforded by telehealth in this domain might be of particular benefit to women or others in caregiving roles. The provision of OUD care via telehealth has been shown to vary based on gender for both patients (Livingston et al., 2024) and providers (Jones et al., 2023), and further research might productively explore in more detail how gender shapes experiences with tele-bupe.

Some studies found that patients expressed additional reasons for preferring telehealth, including feeling more comfortable and better able to engage with clinicians and with their treatment when they could access care "on their turf." For some patients, OUD treatment clinics are stigmatizing environments where they feel uncomfortable or unsafe. Multiple studies found that patients expressed relief that they could avoid seeing the drug use common in the neighborhoods where their clinics were located. It's possible that certain populations may especially benefit from the ability to avoid clinic settings, including LGBTQ+ patients, who often experience stigma in healthcare settings and for whom access to quality, affirming SUD treatment is especially sparse (Paschen-Wolff et al., 2022, 2024). Transgender and gender non-conforming patients, for whom healthcare environments can be dehumanizing and sometimes violent, may use telehealth modalities to access needed care while also maintaining a layer of control over how they and their bodies are perceived by healthcare providers and others they may encounter in a clinic (Inwards-Breland et al., 2024; Mattocks et al., 2022).

One reason that some clinicians may have been hesitant to adopt telehealth for OUD care before the COVID-19 pandemic, even with established patients (which was permitted by the Ryan Haight Act), is fear that the patient-clinician relationship might be negatively impacted by remote visits (Ladin et al., 2021; Miller, 2003). Some studies found that clinicians voiced this concern; however, many patients expressed feeling more comfortable being open with their clinicians via telehealth. These findings, paired with the finding expressed by some clinicians that telehealth can allow greater insight into patients' lives with the ability to see their living arrangements, meet their children and pets over video, etc., add a layer of complexity to the conversation about how to best foster patient-clinician relationships. While some patients do prefer seeing their clinicians in-person and expressed feeling like telehealth visits can be "impersonal," these findings highlight that the environments clinicians may view as ideal for fostering relationships with patients (e.g. the clinic) may feel uncomfortable and foreign to some patients (perhaps especially those who have previously experienced stigma in these environments) and may hamper open dialogue and connection.

While this review was not focused on telehealth's impact on retention in OUD care, some findings speak to the ways telehealth may impact this important outcome. It is possible that the increased comfort and convenience expressed by patients could facilitate increased retention in



care. In addition, findings related to clinicians' beliefs that telehealth can lessen the burden of burnout among providers by allowing work from home flexibilities and better work-life balance suggest that telehealth models of SUD care may also promote increased retention of providers in this field. Given the shortage of SUD treatment providers, this is a potentially important finding that should be explored further (Haffajee et al., 2019; Huhn and Dunn, 2017; Stein et al., 2016).

A major question in the tele-bupe field is for whom the modality is most appropriate. Our findings reveal disagreement among clinicians about whether it is preferable to conduct visits with new patients in-person before transitioning to telehealth to either establish rapport or mitigate perceived risks associated with never meeting patients in-person, or if all visits can be safely conducted via telehealth. Clinicians also varied in their opinions about whether telehealth is most appropriate for patients who are "stable"—which generally refers to patients who are housed, employed, and are already maintained on buprenorphine (Aronowitz and Hudgins, 2022)—or if the modality has the most potential to benefit patients who struggle to engage with in-person care due to "instability" or chaotic life circumstances. While the evidence about which patients are most likely to benefit from telehealth models is still building, it is possible that some patients who are viewed by clinicians as "unstable" and therefore inappropriate for tele-bupe (due to lack of stable housing, polysubstance use, or chaotic life circumstances) might especially benefit from flexible models that don't require them to present in-person; likewise, initial visits, especially with patients who waiver in their desire to seek treatment, might be an important time to eliminate as many barriers as possible (Jakubowski and Fox, 2020). Given the continued public health crisis of opioid overdose and the toxicity of the current street drug supply, addressing barriers to engaging patients in treatment—especially those at highest risk of overdose—should be a top priority.

#### 4.1. Limitations

This review has several limitations. The studies included in this review varied widely in terms of subject populations (both clinicians and patients) and clinical settings. While this heterogeneity can make comparison and synthesis across studies more difficult, it is also an accurate reflection of the varied contexts in which tele-bupe is being used in OUD care today. Because this is a relatively new field—expanding only during and since the pandemic—there are currently relatively few studies exploring patient/provider experiences with this modality of care, and we sought to capture as many as possible. Despite the diversity of the included studies, our thematic analysis revealed mostly consistent themes across sites and subjects, and differences in reported experiences did not vary systematically with study setting or population (except between patients and providers, as discussed above). While qualitative interpretation and synthesis can be subject to individual researcher bias, to mitigate this potential for bias in data collection and analysis, all research steps (screening for inclusion/exclusion; data extraction; thematic coding; data synthesis; quality appraisal) were conducted by at least two researchers independently, with consensus reached in cases of disagreement and a third team member acting as arbitrator when necessary.

#### 5. Conclusion

As the acute COVID-19 public health emergency wanes, the public health crises of opioid use disorder and overdose continue to accelerate. Most individuals who might benefit from access to MOUD go without these treatments due to multiple barriers to in-person care. As the OUD treatment landscape expands with tele-bupe, it is vital that patient and provider experiences with these models inform how they are designed. The results of our review highlight that while both patients and providers hold generally favorable views of tele-bupe, providers are conflicted about the patients and situations for which it is appropriate,

which may lead to inequities in who is offered this form of care.

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#### Drug and alcohol dependence author disclosures

None

#### Author contributions

SA conceived and supervised the study; SA, NZ, and MT collected the data, SA and NZ completed the analyses, SA and NZ led the writing; RJ, JC, and DM assisted with the study and writing.

#### CRediT authorship contribution statement

**David Mandell:** Writing – review & editing, Conceptualization. **Justin Clapp:** Writing – review & editing, Conceptualization. **Shoshana Aronowitz:** Writing – original draft, Validation, Supervision, Methodology, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Naomi Zucker:** Writing – original draft, Formal analysis, Data curation. **Richard James:** Writing – review & editing, Methodology, Data curation. **Morgan Thompson:** Writing – review & editing, Formal analysis, Data curation.

#### Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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