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Understanding opportunities and challenges with telemedicine-delivered buprenorphine during the COVID-19 pandemic

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ABSTRACT

Introduction: Opioid use disorder (OUD) is a debilitating illness that remains a serious public health issue in the United States. Use of telemedicine to deliver medications for the treatment of OUD (MOUD) was limited until the confluence of the COVID-19 and opioid addiction epidemics in spring 2020. Starting in spring 2020, the Department of Veterans Health Affairs (VHA) transitioned from in-person to mostly telemedicine-delivered OUD care to reduce COVID-19 transmission among veterans and providers. To gain a nuanced understanding of provider perspectives on MOUD care delivery using telemedicine, we conducted semi-structured interviews with VHA providers who were using telehealth to deliver MOUD care.

Methods: We conducted semi-structured Zoom interviews with VA clinicians at nine VA Medical Centers (VAMCs) in eight states. Potential study participants were identified as providers who were involved in referrals and provision of buprenorphine treatment for chronic pain and opioid addiction. Audio-recordings of all interviews were transcribed and entered into Atlas.Ti qualitative analysis software. The study team analyzed the transcripts for major themes related to tele-prescribing practices for buprenorphine.

Results: Twenty-three VA providers participated in the study, representing 32% of all providers invited to participate in the study. The research team identified the following four themes: (1) COVID-19 spurred a seismic shift in OUD treatment; (2) Video calls provided a rare window into veterans' lives; (3) Providers experienced numerous challenges to virtual visits; and (4) Providers wrestled with paternalism and trust.

Conclusions: The pandemic accelerated the movement toward harm reduction approaches. Prior to the pandemic, stringent requirements existed for patients receiving MOUD care. Providers in this study reflected on the need for these requirements (e.g., in-person visits, toxicology screens) and how reducing this monitoring implied more trust in patients' autonomous decisions. Providers' observation that videoconferencing offered them a window into patients' lives may offer some ways to improve rapport, and research should explore how best to incorporate the additional information conveyed in virtual visits.

1. Introduction

Opioid use disorder (OUD) is a debilitating illness that remains a serious public health issue in the United States. In 2019, opioids were involved in 49,860 overdose deaths, representing 71% of all drug overdose deaths (Mattson et al., 2021). Among U.S. veterans, the estimates of diagnosed OUD increased from 25,031 in 2003 to more than 69,132 in 2017 (Wyse et al., 2018). The Food and Drug Administration

(FDA) has approved three medications for the treatment of OUD (MOUD): buprenorphine, methadone and naltrexone. Ample evidence suggests that both methadone and buprenorphine provide superior outcomes to non-MOUD alternatives in patients with OUD (Mattick et al., 2014; Nielsen et al., 2017).

Use of telemedicine to deliver MOUD was limited until the confluence of the COVID-19 and opioid addiction epidemics in spring 2020 (Hser & Mooney, 2021). In response to the pandemic-caused restrictions

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on in-person health care visits, state and federal governments made substantial changes to telehealth regulations (Department of Health and Human Services, 2020a, 2020b; Federation of State Medical Boards, 2021), and the Drug Enforcement Administration (DEA) and the Substance Abuse and Mental Health Services Administration (SAMHSA) waived requirements for initial in-person visits for buprenorphine and allowed less frequent in-person visits for patients receiving methadone (Substance Abuse and Mental Health Services Administration, 2020).

Starting in spring 2020, the Department of Veterans Health Affairs (VHA) transitioned from in-person to mostly telemedicine-delivered OUD care to reduce COVID-19 transmission among veterans and providers (Connolly et al., 2020; Pierce et al., 2021). The VHA had used telemedicine in the past, mostly to provide a range of services (e.g., therapy, medication management) to veterans enrolled in the VHA system, particularly in rural areas where driving to a facility would be a barrier to care (Adams et al., 2019; Bumgarner et al., 2017). Previous studies of mental health treatment via videoconferencing (Fletcher et al., 2018; Morland et al., 2020) and via telephone (Castro et al., 2020; Irvine et al., 2020) have shown high rates of efficacy as well as patient and provider acceptance. In a survey of 497 VA mental health providers conducted during pandemic-triggered precautions for in-person visits, majorities rated both video and phone visits as higher quality and more efficient than in-person visits with both providers and patients wearing masks. Regarding MOUD specifically, a multisite retrospective cohort analysis (Eibl et al., 2017) and a review of published studies (Lin et al., 2019) have shown similar effectiveness of MOUD delivered via telemedicine compared to in-person delivery. However, telemedicine has had challenges related to buy-in from providers and facility staff (Connolly et al., 2021; Interian et al., 2018), technical support (Gopal et al., 2021), and privacy (Shelton et al., 2020).

A rapidly expanding literature describes the implementation issues in adopting telemedicine-delivered OUD treatment (Brunet et al., 2020; Weintraub et al., 2018; Zheng et al., 2017). In a large national survey of clinicians treating patients with OUD around the height of the pandemic, more than half (62.5%) of providers responded that telemedicine visits had been as effective as in-person visits. However, when asked their preferences for the role of telemedicine *after the pandemic ends*, only 29% endorsed offering telemedicine frequently to new and established patients, with most providers endorsing options involving more in-person care (Riedel et al., 2021). To gain a more nuanced understanding of provider perspectives on MOUD care delivery using telemedicine, we conducted semi-structured interviews of VHA providers who were delivering MOUD care using telehealth. The interviews focused on hitherto under-studied processes of telehealth interactions in the scheduling and conduct of telehealth visits for MOUD.

2. Materials and methods

The study team conducted interviews as part of a formative evaluation for a national VHA-funded quality improvement initiative, which aimed to increase access and treatment to MOUD for veterans across multiple VA Medical Centers (VAMCs) in eight states. We conducted semi-structured phone interviews with VHA clinicians at nine VAMCs. The team identified potential study participants as providers who were involved in referrals and provision of buprenorphine treatment for chronic pain and opioid addiction. The research team emailed the VHA providers and invited them to participate in an interview. We used a standardized e-mail script to describe the study, and VHA staff were invited to participate at their convenience. Of the 73 providers contacted, 23 agreed to an interview. All interviews were audio-recorded for transcription and analysis purposes. Each interview lasted approximately 30 min, and the team conducted all interviews between October 2020 and May 2021.

2.1. Data collection and analysis

The study investigators developed a semi-structured telephone interview guide and used it to document providers' experiences of providing MOUD, including the availability of specialty health care services, provider knowledge of OUD-related health care problems, preferences for care, and recommendations to fill perceived gaps in OUD care (Table 1). The interview asked participants about their experiences with the changes in OUD care and how their telemedicine practice changed during the COVID-19 pandemic. Audio-recordings of all interviews were transcribed and entered into Atlas. Ti qualitative analysis software. The team analyzed transcripts for major themes related to tele-prescribing practices for buprenorphine. Two research staff members read each transcript twice, first to familiarize themselves with the text and then, using the coding template described below, to identify important concepts that emerged from the language and assign codes to segments of text. The study used a template approach to code the data using an a priori code list that the team developed to sort and catalog key concepts for subsequent interpretation and analysis. Additional codes not represented in our a priori coding template and that emerged from the data were added to the final codebook. The team selected corresponding quotations for each code to identify the salient themes. The study assessed key concepts across all codes to assess challenges related to tele-prescribing practices for buprenorphine during the COVID-19 pandemic.

3. Results

Twenty-three VHA providers participated in the study, representing 32% of all providers invited to participate in the study. High proportions

Table 1
Medications for the treatment of OUD (MOUD).

Prescriber Interview Questions
1. How has your practice of prescribing Buprenorphine changed since COVID-19?
2. When doing a tele-buprenorphine visit, what platforms do you use (phone, VVC, zoom)? Which platform do you prefer, and why? What platform do the Veterans prefer, and why? What challenges have you encountered using this technology?
3. Where are you located when you conduct a session? Where is the Veteran? Are they usually at their home? In the car?
4. Tell me about your experience working with Veterans who are having difficulty focusing during the session (for example driving/distracted by children) during their visit with you. How do you handle these situations?
5. Tell me about Veterans you may have encountered who may be intoxicated or otherwise impaired?
6. What does your induction process look like when patients can't come to the clinic for induction?
7. Tell me about your dosing of Buprenorphine when you tele prescribe? What factors affect your dosing?
8. Do you prescribe other medications for other psychiatric conditions during your session?
9. How do Veterans get their meds? Have your patients told you about any challenges in getting the meds? How has that changed since COVID?
10. How do you monitor your patients' use of other drugs? How do you manage urine tox testing?
11. Tell me about your experience with patients who have overdosed since COVID? Is there anything you have been doing differently to support these patients? Have the overdoses in this situation impacted your practice?
12. Are there any services your patients need that have been challenging for them to get? (e.g. primary care, residential, specialty mental health) Are you making referrals?
13. Have you learned anything new about your patients from a virtual session that you weren't learning from office visits? Discovered anything about their home life or environment? How has what you learned informed your interaction with your patients? Have you prescribed differently to a patient because of what you learned?
14. Reflect on your initial concerns about remote prescribing. How have your concerns changed?
15. If I were to give you a magic wand and you could have anything, what would you need to improve access or prescribing right now? Anything else you'd like to tell me about?

of participants were psychiatrists (48%) and female (57%) (Table 2). The research team identified the following four themes: (1) COVID-19 spurred a seismic shift in OUD treatment; (2) Video calls provided a rare window into veterans' lives; (3) Providers experienced numerous virtual visit challenges; and (4) Providers wrestled with paternalism and trust. Those themes, and associated quotes, are outlined in detail below.

3.1. COVID-19 spurred a seismic shift in OUD treatment

Beginning in spring 2020, many VAMCs shifted nonurgent clinical appointments to virtual appointments, conducted by telephone or video. Rather than seeing veterans with OUD in frequent face-to-face appointments, and monitoring patients in-person when they started new medication, providers relied on telephone or videoconferencing with veterans to manage ongoing OUD.

A psychiatrist from the Bedford VA noted:

One of the big challenges has been that if we think somebody is not doing well, it's hard to know how they're doing because we're not seeing them if they're not returning our calls, and then all of a sudden, they're running low on medication, and we're faced with this like do we fill it or do we not fill it? Like, if we don't fill it, then they're going to be at even more risk if we take them off of their medication. And so, it just all feels like much more disconnected.

A clinical pharmacist emphasized the increased importance of providing clinical care in a way that placed a greater emphasis on medication management for veterans:

I don't think that my prescribing, the way I approach prescribing and using buprenorphine has really changed. What I think has changed is the way that I have to talk to my patients about it. You know, having to teach somebody how to use buprenorphine over the phone can be a little bit tricky. Having to teach someone how to use naloxone over the phone can be a little bit tricky. So having to kind of reframe all of the normal patient education that I would do, to be more descriptive and verbal.

Another pharmacist spoke of the challenges of providing care with little, if any, guidance from clinical tests or biomarkers of treatment compliance:

So the fact that we don't need to have that initial face-to-face visit, I think has really facilitated getting people treatment more quickly, but at the same time, it can be difficult, because if we have certain monitoring that we need done, if we need a urine drug screen, if we need an EKG, that is all a little bit more complicated to get, in order to make sure that we're giving them safe treatment.

Many providers highlighted the importance of veterans coming into the VA to receive their care, especially those suffering from comorbid mental health conditions. One psychologist noted:

I think there's value in coming into the clinic. I think there's value in Veterans getting out of their homes. Some of them, that's the one

reason they get out of their house in a given week, is to see a provider, and now we're giving them that out. I don't know that that's necessarily the healthiest offer. Notably with our population with PTSD, we know avoidance is a big factor of that presentation. And allowing them to have their visit virtually and not even get out of their house to see their doctor, I think just feeds avoidance a little bit. I think some Vets actually like this. Long-term, a Vet saying—"Look, I don't want to come in. I want to be seen virtually". And the provider saying—"I don't think that's good for you".

A nurse practitioner concurred with the importance of seeing veterans face-to-face:

Most of the patients that I see for mental health I see on the tele-appointment now. And most of the time, based on my experience, some of the patients when I see them face-to-face, it's easier to evaluate them and talk to them and see how they are, see their movement and things like that. And then be able to maybe convince them about attending counseling and things like that.

3.2. Video calls provided a new window into veterans' home lives

Though the pandemic provided challenges with managing OUD, it also afforded clinicians a glimpse into veterans' lives through video calls. Veterans often took their telehealth appointments at home, and clinicians were able to see veterans' homes and develop a better understanding of the context of veterans' lives and how they managed their condition at home. As one primary care provider noted:

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. So, one Veteran, he had started building model airplanes during the pandemic. It was a hobby that he had taken on, and his entire ceiling had all kinds of different model planes. And so, he would sort of show his progress over time. He's also an artist and a musician, so he showed me his piano and like different books he collected over the years.

One addiction psychiatry fellow concurred:

With the video visit, you learn a lot. Because we have patients where we see them interacting with their family members while we're on the video with them. Especially if you know that family member through the care of the patient, whether it's like, a disruptive person in the patient's life or not. So being able to witness the patient's dynamic with their family members or people that live with them, I feel like you learn. You know, you certainly learn just by seeing the setting where you're speaking to the patient from. Like, there are limitations that can be in the home setting that you wouldn't have even imagined.

One clinical pharmacist noted:

I have a few patients who are caregivers for their grandchildren, and so hearing the grandchildren in the background, or if they're on video, seeing them, it kind of sparks a conversation and gets them in a better mood. Same with pets. I'll hear a dog barking in the background, and we talk about dogs for a little bit. So it can be kind of like a bonding experience, too. I do feel like in that regard, you do get a little bit more of an insight into how they live their life on a daily basis. Whereas if they were coming into the office, it's kind of like—"Okay, let's get down to business, let's talk about your meds, and then you go home and I see you again in another month or two".

Table 2
Demographics.

Demographic Variables	Frequency	(%)
Sex		
Female	14	(60.9)
Male	9	(39.1)
Specialty		
Psychiatrist	11	(47.8)
Internal Medicine	5	(21.7)
Nurse Practitioner	3	(13.0)
Psychologist	2	(8.7)
Pharmacist	1	(4.3)
Family Medicine	1	(4.3)

3.3. Providers experienced numerous virtual visit challenges

Many providers spoke of the challenges in providing care for veterans who were distracted with other activities during the scheduled appointment. One psychiatrist noted:

They're in the bathroom. They're on the bus. They're in the store. They're yelling at me about why I am making them step outside of wherever they are into the rain to be on the phone? I'm like, "we scheduled this appointment together. Would you like to reschedule?" I don't control the weather, and you agreed to this appointment time. So, it really feels like people are not, they don't prioritize the appointment time the way that they would. They're chasing their dog into the woods until they're so far into the woods that the call gets dropped.

Another psychiatrist concurred with the frequent distractions:

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.

Another primary care provider described the changed dynamic of calling a patient for a virtual appointment:

It's a little frustrating when they pick up when they're driving, and then you feel like you're sort of interfering with their day, when really, they have the appointment. You tell them that they need to pull over for us to have this visit, or you just need to reschedule for another day.

Another challenge that several providers noted was related to the ability of veterans to manage video technology. One psychiatrist explained:

I don't think the Veterans are more distracted because they're doing video. No. There is a huge problem with people not being technologically savvy. And it's probably directly related to age. It's probably like a linear relationship with age and inability to get on calls. And so, we have a bunch of Veterans who don't want to deal with that so we do telephone visits with people, which I hate doing.

Another challenge that some providers encountered when speaking with veterans on the phone or video was that some veterans appeared to be intoxicated, as one psychiatrist noted:

I can say during the month, I have encountered—not 10, I would say five or seven people who have been actively high or intoxicated at the time I called them.

Another psychiatrist concurred:

Usually on the calls, there's people with alcohol, not people with opiates. And you can't tell if somebody is incapacitated or not. I mean, sometimes. I had some guy who was all hopped up the other day, and he insisted he was not using any meth, so I don't know. We have that problem with people who use alcohol and will be intoxicated during the call.

3.4. Providers wrestled with paternalism and trust

Many providers noted that the pandemic had necessarily caused them to place more trust in their patients, especially because they could no longer rely on urine toxicology screens or in-person interactions to assess veterans' compliance with treatment regimens. One addiction medicine fellow noted:

I think because of COVID and not being able to see patients, not having objective data, I think you have to trust the patients a lot more to manage some of this themselves, in a way. I think the way that we've practiced has become a little less paternalistic. And so far, it doesn't seem that there's been any negative consequences from it, but I can't be sure.

Another internal medicine provider spoke of paternalistic aspects of treating patients with pain or opioid addiction:

I personally am in the camp that we don't have to be so paternalistic with our patients with chronic pain or opioid addiction, and so forcing them to do all these very frequent urine tox screens and prove to us that they won't violate this long-term opioid treatment contract, I think kind of undermines the trust that you can build with the patient. Relapse and remitting are a part of the disease and it's expected.

A nurse practitioner also emphasized the role of trust:

It's harder because a lot of the treatment we do depends on building relationship and trust, especially for people who are making that shift from high-dose opioids to Suboxone, like the prescribed opioids. It's a risk for them. They're really, really scared because they're giving up what they've known that has felt like it's kept them safe. And so, it takes a tremendous amount of trust to do it, and so it's a little harder with telehealth. It takes more work. It takes more visits. We have to do all the teaching and make sure that they understand like the dosing, and so it's a little harder to do by phone, and some of them don't have the technology to do video, and so we're just doing telephone.

4. Discussion

Our findings describe providers' perspective on the provision of VHA care to veterans with opioid use disorders during the COVID-19 pandemic as care shifted from mostly in-person visits to predominately telemedicine visits.

The movement toward harm-reduction approaches was greatly accelerated by the pandemic. Prior to the pandemic, stringent requirements existed for patients receiving MOUD care. Providers in this study reflected on the need for these requirements (e.g., in-person visits, toxicology screens) and how reducing this monitoring implied more trust in patients' autonomous decisions. Providers' reflections on trust might also reflect their learning more about patients in their home and other environments, and providers being reminded how much of treatment outcomes are determined by factors outside the office visit.

Aspects of MOUD care have long existed over which providers have discretion, such as how much on-site monitoring is required. For example, many patients can safely transfer from a full opioid agonist to buprenorphine outside of medical settings (so-called home inductions), but the guidelines for when initiating buprenorphine requires office-based or home monitoring leave considerable room for providers' clinical judgment. A VHA initiative to provide MOUD in primary care and other nonaddiction specialty settings (Gordon, Drezler, et al., 2020) targets patients with OUD who need less monitoring and can be managed with fewer visits (Spelman et al., 2021). A 2019 review did not find any relevant studies to conclude that urine toxicology monitoring, typically requiring an in-person visit, improves outcomes in patients on MOUD (McEachern et al., 2019); the only randomized clinical trial varying toxicology testing frequency in patients on MOUD was embedded in another intervention varying methadone take-home dose duration (Chutuaape et al., 2001). The absence of buprenorphine in urine, suggesting that the medication is not being ingested, was rare when sought in a clinical population prescribed buprenorphine (Sobel et al., 2021); although the study did not evaluate other indicators of non-adherence such as unusual levels of nor-buprenorphine. In summary, the

efficacy of some in-person monitoring requirements is unknown, and providers' concerns about these requirements are justified. Another published survey of MOUD providers indicated that despite pandemic-related relaxation of requirements for in-person care, providers felt a need to provide in-person MOUD care because they perceived ambiguity about whether in-person visits were still required (Treitler et al., 2022).

Of note, providers raised the issue of establishing rapport and trust with their patients during video or phone appointments. An editorial in the Economist spoke to the challenges of patient-provider virtual communication: "Internet chats disrupt the automatic, split-second cues on which conversation relies" (The Economist, 2020). The editorial goes on to cite controlled studies showing that interactions are seen more negatively when millisecond pauses are inserted, the types of pauses that videoconferencing calls entail (Roberts, 2013; Roberts et al., 2006). These concerns are also present in patients. Veterans with Type 2 diabetes interviewed about their experience of videoconference visits expressed concerns that providers paid less attention to them, and that they felt rushed, less involved during the visit, and had less rapport with their provider (less eye contact, inability to express using body language, less small talk) (Gordon, Solanki, et al., 2020). The stigma people with OUD have internalized (Cunningham et al., 1993) and the stigma they anticipate from others (Biancarelli et al., 2019; Brener et al., 2010) have both been associated with less engagement in treatment. These feelings can complicate establishing rapport with a provider, virtually and in-person. Best telemedicine practices, with extra emphasis on rapport-building early in a treatment session and provider comfort with the modality (Lin & Frank, 2021), may ameliorate these challenges to building a therapeutic alliance with patients on MOUD.

Providers' observation that videoconferencing offered them a window into patients' lives may offer some ways to improve rapport, and research should explore how best to incorporate the additional information conveyed in virtual visits. Addiction treatment in general, and cognitive-behavioral approaches in particular, emphasize understanding the cues, setting, and mental state that precede substance use; such knowledge can be facilitated by a video call with a patient in their home or other environment. Video calls may facilitate exploration of family issues when significant others enter the call, even if unplanned.

Our findings are consistent with reports of a digital divide in which patients with worse access to the Internet (e.g., in rural areas), socioeconomic disadvantages (e.g., minoritized populations), and patients with specific impairments have had more difficulty with telehealth approaches involving video connections (Usher-Pines et al., 2021). In addition to technological challenges, our providers described conditions that are over-represented in people with substance use disorders and that interfere with video visits: intoxication, distractibility, and impaired ability to remember planned appointments (Day et al., 2015; Weinborn et al., 2011). Research has shown that impairments in cognitive function are associated with worse outcomes in a variety of addiction treatments (Shulman et al., 2018), but these impairments may have been particularly salient to our interviewed providers because their patients were taxed by the cognitive demands of videoconferencing. The benefits of virtual visits may be maintained in some patients with visits involving sound without video. A review of tele-psychotherapy in the *American Journal of Psychiatry* found that there was no advantage of psychotherapy involving video to that conducted with sound only (Markowitz et al., 2020).

A limitation of our data is that providers' subjective observations are not objective outcomes. A caveat is that providers' report of difficulties with tele-prescribing MOUD should be taken as a challenge to the modality, but not a judgment of telehealth's efficacy. The prompt questions in our semi-structured interview may have, by their emphasis on challenges in telehealth delivery, elicited negative experiences. The study team conducted the interviews during a pandemic, a time of increased dysphoria (Bueno-Notivol et al., 2021). The negative experiences providers described—such as patients forgetting appointments or participating in clinical care while online shopping—may be better than an in-

person meeting being forgotten or skipped. Providers' noting patients' participation in virtual visits while intoxicated may have been noteworthy to providers whose patients did not travel to in-person visits because of the challenges of doing so under the influence. Finally, tele-prescribing MOUD is likely to evolve over time, and hopefully it will improve as providers and patients become more experienced with the modality.

CRediT authorship contribution statement

Kristin Mattocks: Conceptualization, Methodology, Writing- Original draft preparation/Review & Editing; **David Moore:** Formal analysis, Data curation; **Dora Lendvai Wischik:** Visualization, Investigation; **Christina Lazar:** Project administration, Investigation; **Marc Rosen:** Conceptualization, Methodology, Writing – Original Draft/Review & Editing, Supervision, Validation.

Disclosure statement

This is original research that has not previously been presented or published elsewhere.

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