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# Coronavirus Disease 2019 and the Impact on Substance Use Disorder Treatments



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## KEYWORDS

- COVID-19 • Pandemic • Substance use disorder treatment • Opioid use disorder
- Digital technology • Telemedicine

## KEY POINTS

- The societal response to limit the spread of COVID reduced access to in-person care for SUDs.
- In an attempt to keep patients and health care providers safe during the COVID pandemic, many treatment programs for SUDs made a transition from in-person to remote care delivery (ie, telemedicine visits).
- Evidence supports telemedicine's acceptability by patients and providers as well as the need for telemedicine to be complemented by in-person care for those with the greatest need.
- The progress made in the area of telemedicine for the treatment of SUDs should not recede postpandemic.
- Future research is necessary to effectively characterize individuals who are likely to engage and be retained in remote care and in-person care.

## INTRODUCTION

The coronavirus disease 2019 (COVID-19) pandemic and the resulting societal response to limit its spread poses a threat to vulnerable groups such as those with substance use disorders (SUDs). The need for social distancing to limit the spread

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of the infection disrupted the delivery of care in most specialized SUD treatment programs as well as community-based mutual-aid support groups (eg, Alcoholics Anonymous [AA]). Reduction in access to SUD treatment in general medical settings was further exacerbated by furloughed staff, reduced work hours, and redeployment of primary care and emergency medicine teams to deal with acute COVID infections. Consequently, the treatment gap found among individuals with SUDs before the pandemic was further widened.

Concurrently, the stressors brought about by the pandemic including social isolation, loss of employment, financial concerns, and fear of falling ill with COVID have disproportionately affected individuals with SUDs. An abundance of stressors in the absence of social and institutional support led many individuals to increase their substance consumption as a means of coping with these challenges and may have caused many individuals in recovery to relapse.

Many treatment programs for SUDs made a swift transition from in-person to remote care delivery (ie, telemedicine visits) to keep patients and providers safe from COVID infection. Relaxing of regulatory restrictions on the provision of controlled substances (eg, opioid agonist therapy [OAT]) and payors' coverage of telemedicine visits facilitated the adoption of remote care in the treatment of SUDs during the pandemic. This transition necessitated a considerable organizational effort, and ongoing activities are underway to restore the full breadth of treatment services that were available before the pandemic.

The transition to telemedicine presents both advantages and disadvantages for patients and providers alike, and emerging data acknowledge factors that facilitate or hinder treatment engagement and retention.

This special article used a selective literature review to synthesize emerging evidence regarding changes prompted by the COVID pandemic to the clinical care of individuals with SUDs. We discuss the (1) reduction in availability of care, (2) increase in demand for care, (3) transition to telemedicine use, (4) telemedicine for the treatment of opioid use disorders (OUDs), and (5) considerations for the use of telemedicine in treating SUDs and implications for practice.

## **REDUCTION IN AVAILABILITY OF TREATMENT OF SUBSTANCE USE DISORDER DURING THE PANDEMIC**

Traditionally, in-person care has been the mainstay of treatment of SUDs. In specialized addiction treatment settings, many face-to-face individual and group-based therapies were halted due to reduced hours or partial closures of treatment facilities. In many residential substance rehabilitation programs, patients often sleep, dine, and receive treatment in congregate conditions<sup>1</sup> as part of the recovery milieu. Lack of trained staff in Infection Prevention and Control (IPAC), limited funding, and space limitations made implementing infection control measures a challenge. Specifically, critical activities were affected such as screening for COVID symptoms, access to personal protective equipment (PPE) and quarantine rooms, and the installation of physical barriers.<sup>2</sup> Treatment programs have reported a 20% to 60% reduction in attendance. Consequently, SUD treatment programs have experienced delays in initiating treatment, a reduction in service options, less frequent services, and the prohibition of family visitations.<sup>2</sup> Similarly, public health regulations banned gatherings, which prevented individuals from attending meetings of mutual-aid groups within their communities (eg, AA, SMART recovery); this eliminated much-needed venues of ongoing recovery support.

In general hospital settings, fewer resources were available to treat patients with SUD because of redeployment of clinical staff toward COVID care and preparedness.<sup>3</sup> In particular, the capacity for substance use treatment by emergency medicine staff providers was reduced due to the overwhelming workload created by patients infected by COVID.<sup>4</sup> Furthermore, individuals with SUDs may have been reluctant to approach general hospital care due to fear of infection. However, the percent of hospitalized patients with acute alcohol withdrawal using a Clinical Institute Withdrawal Assessment for Alcohol Scale (CIWA) cutoff of 8 or more was about 34% higher in 2020 compared with the same time in 2019. The peak was at the end of the stay-home orders but continued to be elevated during the reopening phase.<sup>5</sup>

Primary care is another major source of support for individuals with SUDs, providing screening, brief interventions, and medication-assisted therapies.<sup>6</sup> Primary care facilities reported a 21.8% reduction in visit volume during the early days of the COVID pandemic.<sup>7</sup> Many primary care services had reported a decreased capacity for in-person care during the pandemic. Shorter opening hours, staff redeployment, and complete closures were all factors that contributed to a reduction in the availability and accessibility for SUD treatment.

### **INCREASE IN DEMAND FOR TREATMENT OF SUBSTANCE USE DISORDERS DURING AND POSTPANDEMIC**

In the United States, although evidence suggests that more than 20 million individuals are in need of treatment of SUDs, only 1 in 10 have access to care.<sup>8</sup> Accounting for this treatment gap are a lack of skilled providers which creates long wait times, a lack of integration of SUD treatment within general medical settings, stigma, and living in nonurban communities.<sup>9</sup> Concurrently, with the reduction in the availability of treatment of SUDs, the societal response to the pandemic was associated with an increase in the demand for treatment of SUDs. For example, a study looking at medical visits to a large Health Maintenance Organization found a 42% increase in the number of visits for addiction conditions during the first few months of the pandemic when compared with the pre-pandemic volume visit<sup>10</sup> and a similar increase was also observed in another study conducted in primary care.<sup>11</sup> Specifically, during the pandemic, non-Hispanic whites reported an increase of 10.5% in mental health (MH)/SUD visits.<sup>11</sup> This increased demand for SUD treatment could be attributed to a decline in emotional and psychological well-being of the population. The far-reaching societal responses to limit the spread of COVID-19 led to closures of workplaces, educational institutions, places of worship, and recreational/entertainment community venues. In conjunction with guidance to limit one's interaction to only household members, social isolation, loneliness, and depressive symptoms have been higher than ever.<sup>12,13</sup> Declines in psychological well-being manifested by anxiety or depressive symptoms as well as heightened substance use patterns to cope with such symptoms have been reported by 40% of individuals.<sup>13</sup>

Although infection control measures are necessary to protect the public from the COVID virus, the negative effects are disproportionately borne by vulnerable groups, such as people with SUDs, who tend to have low social capital. Vulnerable groups are also overrepresented in minimum-wage jobs, which saw a greater loss of employment compared with those working in other positions (38% versus 13%) during the first months of the pandemic.<sup>14</sup> Financial stressors and social isolation, especially in the absence of traditional sources of formal and informal addiction support, creates the "perfect storm," which drove many to increase their substance use patterns.<sup>13</sup>

Pandemic-related distress can negatively affect individuals who are in different stages of their SUD illness. Stress is a well-established factor that is involved in relapse to substance use.<sup>15</sup> Stress can induce cravings and preoccupation with substance use that eventually culminates in substance consumption.<sup>16</sup> For example, those who are working toward stabilization of excess substance consumption or those in early remission usually require intensive in-person support, characterized by high frequency of visits (1–2 times per week). The reduction of in-person professional and peer (mutual aid groups) support concomitantly with an increase in pandemic-related concerns (eg, loss of employment) and stressors (eg, loneliness) can potentially trigger a relapse to previous substance use patterns. Moreover, individuals who are in remission from their SUD could experience a relapse due to a new stressor (eg, loneliness) brought about by the pandemic, in the absence of traditional support such as mutual-aid groups (eg, AA meetings). Individuals without SUDs or with sub-threshold substance use patterns, such as at-risk drinking, may develop a de novo SUD in response to the changes brought about by the pandemic. Individuals who drank heavily in postwork hours may have a greater opportunity to consume alcohol during their work day when transitioned to work from home. Others may have greater motivation to consume substances to cope with added stressors, such as combining work from home with homeschooling children. Population-based surveys found that approximately 13% or more individuals either started or increased their use of alcohol to cope with stress related to the pandemic.<sup>13,17,18</sup>

It is highly likely that the general increase in alcohol consumption during the pandemic might not return to baseline levels of consumption in the new normal state. The disproportionate increase in drinking especially binge drinking patterns by women, portend a future increase in alcohol-related harms including use disorders in women. The demand for services might increase once people realize they might have developed a problem and cannot stop on their own. It will be important for primary care providers to increase their screening of all their patients and provide effective treatment geared to the severity of use disorder detected.

## **TELEMEDICINE FOR SUBSTANCE USE DISORDERS: GENERAL CONSIDERATIONS**

For many SUD treatment programs, the increased demand for SUD treatment in addition to a reduction in the availability of in-person care during the pandemic led to an adoption of innovative service delivery models, most of which include the use of telemedicine. Recently, the use of telemedicine has been increasing as practitioners attempt to improve their reach and accessibility to care for patients, particularly those in for rural populations.<sup>19</sup> The use of telemedicine provides a solution for health care continuity while keeping patients and providers safe by facilitating stay at home and preserving limited PPE for only those encounters requiring face-to-face visits.<sup>20</sup> By definition, telemedicine includes the use of telecommunications technology to deliver health care services across a distance.<sup>19</sup> The technologies most commonly used are telephone (audio only) and video/Web-conferencing (video conferencing [VC], audio, and visual). Telemedicine can provide care that is similar to in-person delivery with numerous advantages for both the patients and providers. Patients will likely experience a reduction in time and travel commitments for care, increased convenience, a decline in wait time, and reduced stigma.<sup>21,22</sup> Consequently, compared with in-person care, the use of telemedicine suggests greater attendance and a decline in the number of canceled mental health appointments<sup>23</sup> as well as a lower no-show rate (8.3 versus 25.9%) in attendance for treatment of OUDs.<sup>6</sup> Despite these advantages, telemedicine has not been widely adopted in the area of SUD treatment before

the pandemic.<sup>24</sup> The most notable barriers among telemedicine providers pertain to regulations imposed by governing bodies and payors. These regulations include a requirement for an in-person assessment for prescribing of controlled substances and a lack of reimbursement for remote visits. Most of these barriers have been removed early in the course of the pandemic, which facilitated a rapid increase in the use of telemedicine in the treatment of SUDs.<sup>25</sup> The patient-level barriers included lack of privacy, access to advanced telecommunication equipment such as smartphones and laptops, poor Internet connections, lack of privacy in their settings, and low levels of digital literacy.<sup>22</sup>

## **TRANSITION OF SUBSTANCE USE DISORDER TREATMENT PROGRAMS TO TELEMEDICINE DURING THE CORONAVIRUS DISEASE PANDEMIC**

At the onset of the pandemic, 43% of mental health treatment facilities in the United States and only 27% of SUD treatment facilities had telehealth capabilities.<sup>26,27</sup> With COVID-19 restrictions preventing in-person care, the number of visits rapidly declined from March 2020, reaching a reduction of 48% by July of 2020 when compared with the previous year.<sup>28</sup> This reduction was more than 2-fold greater than the 21.8% loss of visit volume reported in primary care settings.<sup>7</sup> Primary care settings seemed to demonstrate a greater preparedness and a willingness to adopt remote visits via telemedicine early during the pandemic, which may have limited the number of lost visits.

Both clinicians and patients report encouraging experiences regarding the acceptability of telemedicine. Most providers used a combination of telephone and VC visits. Telephone visits were helpful for patients who lacked digital literacy or computer/Internet access.<sup>22</sup> Most providers thought that telemedicine could provide SUD treatment that was comparable to in-person care.<sup>22</sup> Many practitioners acknowledged the benefits of VC compared with telephone with regard to accurately assessing the patient's condition and learning about the patient's home environment.<sup>29</sup> Other practitioners recognized the need to continue to have in-person visits for new patients or those experiencing substance relapse.<sup>30</sup> For some treatment programs, patient enrollment increased when services were offered remotely, as Langabeer and colleagues<sup>29</sup> found a 2-fold increase in the number of patients attending a peer support recovery group delivered remotely compared with in-person recovery groups. Other services have described an opposite trend in participation rates when transitioning from in-person to remote visits. For example, McKiever and colleagues<sup>31</sup> reported a 46% reduction in attendance when the implementation of a counseling group intended for pregnant women with SUDs transitioned from in-person to remote visits. This finding highlights the need to ensure that adoption of telemedicine services in the treatment of SUDs is evaluated for both accessibility and acceptability to different populations of patients. Future research is needed to elucidate which populations are more likely to benefit from remote versus in-person versus hybrid models of care.

Mutual-aid support groups such as AA, Narcotics Anonymous, and SMART recovery are traditionally delivered in person.<sup>32,33</sup> However, in the context of COVID-19, attendance of mutual support programs via online platforms have flourished.<sup>34</sup> In part, the self-directed nature of mutual aid likely permitted the adoption of existing Web-conferencing platforms, which are low cost or free. Given the global community adoption of mutual aid, online support is essentially available 24/7 across the world. This ease of access partially compensated for the deficits in the availability of SUD treatment programs.<sup>33</sup>

## TELEMEDICINE IN THE TREATMENT OF OPIOID USE DISORDERS

During the COVID pandemic, a considerable change occurred in the delivery of treatment of individuals with OUD.<sup>27,35</sup> Traditionally, initiation of OAT such as methadone or buprenorphine for OUD required an in-person assessment as well as frequent follow-up visits until stabilization of substance use patterns and medication dose had been reached. During stabilization visits, a urine drug screen would be performed to verify the presence or absence of misused opioids concurrently with optimization of the OAT dosing. In-person care during the stabilization phase of OUD is considered advantageous because of its ability to provide structured support, close monitoring for OAT side effects, and prevention of diversion of medication, during dose titration (eg, overdose and sedation). Regulators define OAT dose titration schedules, urine drug screen frequency, and the gradual transition process to take-home doses of medication once the individual has stabilized and ceased illicit opioid use.

With the onset of the pandemic, most jurisdictions began to allow for telemedicine visits for the assessment and treatment of OUD, reduced frequency of urine drug screening, and an expedited schedule for take-home doses. In one study of primary care settings, 91.2% of facilities modified their OUD treatment practices, specifically the implementation of medication and behavioral health/counseling visits.<sup>36</sup> Approximately half of the initial and follow-up behavioral health/consulting visits were conducted remotely.<sup>36</sup> This compared with 23.1% and 40.4% of initial and follow-up medication evaluations, respectively, that were conducted virtually,<sup>36</sup> which allowed patients to receive care for OUD while mitigating the risk of contracting or spreading COVID. In some cases, in-person visits were reserved for new patients, patients who relapsed, patients who did not adhere to prescribed medication, patients who lacked proper technology, patients who were homeless, patients requiring injections, and patients who needed a physical examination or testing.<sup>22</sup> To mitigate the risk of COVID, programs may have chosen to offer OAT dropoff at the patient's home or allowing for a family member to pick up their medication in the case the patient was in quarantine.<sup>35,37</sup>

The relaxing of regulations led to fewer disruptions in the delivery of care brought about by the pandemic, and in some cases, provided an opportunity for OUD treatments to have a greater reach than previously occurred.<sup>38,39</sup>

In many cases, OUD treatment programs can successfully transition to the telemedicine platform by using existing provider resources.<sup>29</sup> In one example of an urban center, telemedicine was used to provide comprehensive care for patients including initiation and maintenance of OAT, behavioral counseling, and peer support recovery groups.<sup>29</sup> These remote services reported a greater uptake by patients compared with in-person care. To ensure equity, some programs reported on their efforts to close the "digital divide," when patients could not access telemedicine due to low digital literacy or lack of computer/Internet access. For example, pregnant and postpartum women with SUD were provided with borrowed smartphones and prepaid Internet data, which enabled them to access telemedicine.<sup>40</sup> Technology was used not only for the delivery of telemedicine visits but also for sending patients previsit mental health and substance use screeners for the purpose of informing care.<sup>40</sup>

Given the excess number of deadly opioid overdoses that was observed during the COVID pandemic, certain programs aimed to increase access to OUD treatment.<sup>41</sup> In New England, the availability of OAT via phone visits prompted the use of a treatment "hotline," which provided patients with an opportunity to access buprenorphine treatment while simultaneously removing many of the barriers associated with initiating such treatment.<sup>42</sup> Similarly, in Florida, people attending a needle-exchange site were invited to participate in a telemedicine visit for the initiation of OAT. The latter

program was cofacilitated by medical students, which has an added value of reducing stigma against SUDs among future health care providers.<sup>43</sup>

It seems that relaxing regulations to allow for remote OUD treatment and greater flexibility in take-home doses can have several advantages; it improves access to care and is more convenient and less disruptive to patients' lives. Furthermore, based on prepandemic data, most patients reported high levels of satisfaction, simplicity, and comfort with using telemedicine and believed that the quality of virtual care received from practitioners was similar to that of in-person care.<sup>44</sup> However, these benefits need to be balanced with the risk of accidental overdose, misuse, or diversion of OAT, especially during early stabilization periods. Similarly, telemedicine may not provide the structured support that is beneficial to individuals with unstable OUD. In this case, in-person settings could be advantageous.

The advent of monthly injections of buprenorphine as a treatment option in North America also offers a potential solution. By label, the patient had to be on a stable dose of Sub Lingual (SL) buprenorphine greater than 8 mg for at least a week. However, novel models with earlier administration of the injection in emergency rooms after tolerable test doses of SL buprenorphine are being trialed. The monthly in-person visits combined with telemedicine could be a good compromise in providing safe and effective pharmacotherapy and counseling especially during early recovery. Moreover, patients on stable doses of 8 mg or less of buprenorphine could be transitioned to subcutaneous 6-monthly implants to minimize clinic visits.

Although not permitted in the United States, in Canada, Sustained Release Oral Morphine (SROM) has gained acceptance as a suitable form of OAT.<sup>45</sup> In some provinces, supervised injection facilities and injection Opioid Agonist Therapy (iOAT) are also becoming more commonplace. For those patients in quarantine in COVID shelters or hotels, delivery of OAT and/or Supervised Injection Site (SIS) was permitted. Regardless, given the toxic drug supply especially admixture of highly potent illegal benzodiazepines such as etizolam with designer fentanyls including car-fentanyl has led to an increase in opioid-related poisonings and deaths. In British Columbia and Ontario, programs of safe supply have been initiated with access to high-potency prescription opioids such as hydromorphone.

## **DISCUSSION**

The COVID-19 pandemic and the societal response to limit its spread led to regulatory and policy changes that greatly affected the delivery of SUD treatment. SUD treatment programs can now deliver comprehensive care via remote visits, which includes screening, initiation of medication, behavioral counseling, and peer support groups, and this has been a paradigm shift for most SUD treatment facilities that traditionally relied on in-person care. Although this shift was necessary to maintain continuity of care during the pandemic, it may not be suitable for all. Therefore, additional information is needed to characterize which patient populations are likely to benefit from remote care. This information can allow practitioners to dedicate more time and resources, such as frequent in-person care, toward those patients who are more vulnerable.

## **CONSIDERATIONS REGARDING THE USE OF TELEMEDICINE IN THE TREATMENT OF SUBSTANCE USE DISORDERS**

The COVID-19 pandemic provided us with valuable insight regarding the potential advantages and disadvantages of telemedicine use in the treatment of SUDs. Emerging evidence suggests that health care providers find telemedicine to be a venue for care



delivery that is comparable with in-person care, but they also identify that remote support may not be enough for patients with severe SUDs, who are struggling.<sup>22,30</sup>

In the early stages of transitioning to remote care, it can become evident that certain groups of the population will derive fewer benefits. Studies indicated that older adults (aged 60+) find the use of telemedicine for SUD treatment challenging. For example, a qualitative study of older adults with alcohol use disorder and their providers found that both patients and providers thought that the quality of remote support was inferior to in-person care.<sup>46</sup> This finding could partially explain the low rates of engagement within remote programs. Similarly, others reported that older adults were disproportionately affected by social isolation during the pandemic. Consequently, for many older adults, remote care may not provide sufficient social support.<sup>47</sup> It was also agreed that many older adults have low digital literacy and limited computer/Internet access that precluded participation.

Studies found that patients with severe SUDs or concurrent psychiatric conditions may also be challenged by remote care leading to poor engagement and retention. Patients who report polysubstance versus single substance use concerns experienced greater disruptions to their care as well as greater difficulty in accessing remote treatment of SUDs.<sup>48</sup> It is likely that remote care does not provide the same level of support that in-person care provides. Similarly, women with OUDs who are pregnant reported a substantial reduction in attending group-based therapy when it was offered remotely.<sup>31</sup> Although this could be attributed to low digital literacy and low digital access (eg, lack of computer, Internet) among vulnerable groups, it also suggests that in-person care is a critical component of care for many individuals.

It is likely that most SUD treatment programs will be able to meet the needs of their patients by allowing for a hybrid model of care that includes a combination of in-person and remote visits.<sup>22</sup> We recognize that in-person and remote care are complementary and that one cannot fully replace the other. The optimal composition of care (remote versus in person) should be tailored to the needs of the individual and agreed upon by patients and providers by shared decision making.

## **IMPLICATIONS: HOW WILL THESE CHANGES AFFECT FUTURE DELIVERY OF SUBSTANCE USE DISORDER TREATMENTS?**

During the pandemic, the use of telemedicine by SUD treatment programs substantially increased and may have partially helped to enhance accessibility and availability of treatment services. As the pandemic evolves, a growing number of SUD treatment programs will continue to acquire telemedicine capacity. Yet, even at this time, a year and a half into the pandemic, the ability of programs to deliver the full breadth of services via remote means is diminished.

SUD programs are now tasked with service planning for years to come with many embracing the use of telemedicine as an integral part of future services. The sustainability of telemedicine postpandemic will be determined by numerous factors. Integrating comprehensive care for SUDs including medication management, behavioral counseling, group-based therapy, and low-intensity care for long-term relapse prevention (ie, aftercare) will be essential. At the same time, the use of telemedicine needs to be balanced with an existing capacity for in-person care for several patient subgroups that are likely to face challenges in engagement and retention via telemedicine care. Investments in infrastructure to expand the reach of telemedicine among practitioners and patients will be necessary, particularly in rural areas.<sup>49</sup> Furthermore, SUD treatment programs will need to train their providers to be proficient in best practices of telemedicine use and provide organizational support for both modalities of care.<sup>49</sup> Programs

should offer patients training to improve digital literacy and ensure they have access to computer/smartphone and Internet.<sup>49</sup> To sustain and grow telemedicine use in the post-pandemic era, it will be necessary to extend those policies that allowed for telemedicine visits to occur during the pandemic. Such policies would allow for continued reimbursement to providers for in-person as well as remote care and allow for the provision of care, especially for OUD, without the need for an in-person assessment.

Telemedicine opens up several opportunities to revolutionize SUD treatment by integrating care into general medical settings,<sup>6</sup> offering low access entry to treatment by using phone “hotlines,”<sup>42</sup> using remote screening tools and measurement based-care to inform SUD treatment, and integrating digital health technologies as an adjunct to care delivered by providers.<sup>40,50–52</sup>

## SUMMARY

The COVID-19 pandemic is an unprecedented force that has drastically changed our lives. In particular, the pandemic had a negative effect on vulnerable groups such as individuals with SUDs. The societal response to limit the spread of the virus reduced access to in-person care for SUDs but concurrently boosted the adaption of telemedicine for care delivery. Emerging evidence not only supports its acceptability by patients and providers alike but also highlights the need for it to be complemented by in-person care for those with the greatest need. Nevertheless, most agree that gains made in the area of telemedicine for the treatment of SUDs should not be receded postpandemic. Therefore, there is a pressing need for evaluation and participatory research (with patients, families and health care providers) to effectively characterize individuals who are likely to engage and retain in remote care and conversely, those who require in-person care. This information is crucial to inform organizational change in specialized SUD treatment programs and in treatment programs that are integrated into general medical settings.

## CLINICS CARE POINTS

- Telemedicine opens up several opportunities to revolutionize SUD treatment by integrating care into general medical settings,<sup>6</sup> offering low access entry to treatment by using phone “hotlines,”<sup>42</sup> using remote screening tools and measurement-based care to inform SUD treatment, and integrating digital health technologies as an adjunct to care delivered by providers.<sup>40,50–52</sup>
- The use of telemedicine needs to be balanced with an existing capacity for in-person care for several patient subgroups that are likely to face challenges in engagement and retention via telemedicine care, such as older adults (aged 60+), people with polysubstance use, and pregnant women with OUD.
- In-person and remote care for the treatment of SUDs are complementary, and a hybrid model of care that includes a combination of both is likely to meet the needs of those seeking care.
- To sustain and grow telemedicine use in the postpandemic era, it will be necessary to extend those policies that allowed for telemedicine visits to occur during the pandemic.
- Higher capacity is needed to treat SUD and increase options for treatment of OUD.

## DISCLOSURE

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## REFERENCES

1. Hanton K, McHugh D, Boris G. A case series: successfully preventing COVID-19 outbreak in a residential community setting at a drug and alcohol addiction treatment center. *Healthcare (Basel)* 2021;9(1):88.
2. Pagano A, Hosakote S, Kapiteni K, et al. Impacts of COVID-19 on residential treatment programs for substance use disorder. *J Subst Abuse Treat* 2020;123:108255.
3. Holland KM, Jones C, Vivolo-Kantor AM, et al. Trends in US Emergency Department visits for mental health, overdose, and violence outcomes before and during the COVID-19 pandemic. *JAMA Psychiatry* 2021;78(4):372–9.
4. Herring AA, Kalmin M, Speener M, et al. Sharp decline in hospital and emergency department initiated buprenorphine for opioid use disorder during COVID-19 state of emergency in California. *J Subst Abuse Treat* 2021;123:108260.
5. Sharma RA, Subedi K, Gbadebo BM, et al. Alcohol withdrawal rates in hospitalized patients during the COVID-19 pandemic. *JAMA Netw Open* 2021;4(3):e210422.
6. O’Gurek DT. Designing and evaluating COVID-19 protocols for an office-based opioid treatment program in an urban underserved setting. *J Am Board Fam Med* 2021;34(Suppl):S136–40.
7. Stephenson E, O’Neill B, Gronsbell J, et al. Changes in family medicine visits across sociodemographic groups after the onset of the COVID-19 pandemic in Ontario: a retrospective cohort study. *CMAJ Open* 2021;9(2):E651–8.
8. U.S. Department of Health and Human Services (HHS) and Office of the Surgeon General. Facing addiction in America: the surgeon general’s report on alcohol, drugs, and health. Washington, DC: HHS; 2016.
9. Pearlman J. Combatting massachusetts’s opioid epidemic: reducing the social stigma of addiction through increased access to voluntary treatment services and expansion of mandatory clinician education programs. *Am J Law Med* 2016;42(4):835–57.
10. Ridout KK, Alavi M, Ridout SJ, et al. Changes in diagnostic and demographic characteristics of patients seeking mental health care during the early COVID-19 pandemic in a large, community-based health care system. *J Clin Psychiatry* 2021;82(2). 20m13685.

11. Yang J, Landrum MB, Zhou L, et al. Disparities in outpatient visits for mental health and/or substance use disorders during the COVID surge and partial re-opening in Massachusetts. *Gen Hosp Psychiatry* 2020;67:100–6.
12. Sherman AC, Williams ML, Amick BC, et al. Mental health outcomes associated with the COVID-19 pandemic: Prevalence and risk factors in a southern US state. *Psychiatry Res* 2020;293:113476.
13. Czeisler ME, Lane RI, Petrosky E, et al. Mental health, substance use, and suicidal ideation during the COVID-19 pandemic - United States, June 24-30, 2020. *MMWR Morb Mortal Wkly Rep* 2020;69(32):1049–57.
14. Statistics Canada. Labour force survey, may 2020. Ottawa (Ontario): Government of Canada; 2020.
15. Preston KL, Epstein DH. Stress in the daily lives of cocaine and heroin users: relationship to mood, craving, relapse triggers, and cocaine use. *Psychopharmacology (Berl)* 2011;218(1):29–37.
16. Volkow ND, Koob GF, McLellan AT. Neurobiologic advances from the brain disease model of addiction. *N Engl J Med* 2016;374(4):363–71.
17. Zajacova A, Jehn A, Stackhouse M, et al. Changes in health behaviours during early COVID-19 and socio-demographic disparities: a cross-sectional analysis. *Can J Public Health* 2020;111(6):953–62.
18. Centre for Addiction and Mental Health. COVID-19 national survey dashboard 2021. Available at: <https://www.camh.ca/en/health-info/mental-health-and-covid-19/covid-19-national-survey>. Accessed on Sept 2, 2021.
19. Tuckson RV, Edmunds M, Hodgkins ML. Telehealth. *N Engl J Med* 2017;377(16):1585–92.
20. Hollander JE, Carr BG. Virtually Perfect? Telemedicine for Covid-19. *N Engl J Med* 2020;382(18):1679–81.
21. Lin LA, Casteel D, Shigekawa E, et al. Telemedicine-delivered treatment interventions for substance use disorders: A systematic review. *J Subst Abuse Treat* 2019;101:38–49.
22. Uscher-Pines L, Sousa J, Raja P, et al. Treatment of opioid use disorder during COVID-19: Experiences of clinicians transitioning to telemedicine. *J Subst Abuse Treat* 2020;118:108124.
23. Frank HE, Grumbach NM, Conrad SM, et al. Mental health services in primary care: Evidence for the feasibility of telehealth during the COVID-19 pandemic. *J Affect Disord Rep* 2021;5:100146.
24. Huskamp HA, Busch AB, Souza J, et al. How Is Telemedicine Being Used In Opioid And Other Substance Use Disorder Treatment? *Health Aff (Millwood)* 2018;37(12):1940–7.
25. Lowey NM. HR 6074-116th Congress (2019-2020): Coronavirus Preparedness and Response Supplemental Appropriations Act2020.
26. Cantor J, Stein BD, Saloner B. Telehealth capability among substance use disorder treatment facilities in counties with high versus low COVID-19 social distancing. *J Addict Med* 2020;14(6):e366–8.
27. Cantor JH, McBain RK, Kofner A, et al. Availability of Outpatient Telemental Health Services in the United States at the Outset of the COVID-19 Pandemic. *Med Care* 2021;59(4):319–23.
28. Cantor J, Kravitz D, Sorbero M, et al. Trends in visits to substance use disorder treatment facilities in 2020. *J Subst Abuse Treat* 2021;127:108462.
29. Langabeer JR 2nd, Yatsco A, Champagne-Langabeer T. Telehealth sustains patient engagement in OUD treatment during COVID-19. *J Subst Abuse Treat* 2021;122:108215.

30. Henretty K, Padwa H, Treiman K, et al. Impact of the coronavirus pandemic on substance use disorder treatment: findings from a survey of specialty providers in California. *Subst Abuse* 2021;15. 11782218211028655.
31. McKiever ME, Cleary EM, Schmauder T, et al. Unintended consequences of the transition to telehealth for pregnancies complicated by opioid use disorder during the coronavirus disease 2019 pandemic. *Am J Obstet Gynecol* 2020;223(5): 770–2.
32. Substance Abuse and Mental Health Services Administration. Staying connected is important: virtual recovery resources 2021. Available at: <https://www.samhsa.gov/sites/default/files/virtual-recovery-resources.pdf>. Accessed on July 22, 2021.
33. Kelly JF, Abry A, Ferri M, et al. Alcoholics anonymous and 12-step facilitation treatments for alcohol use disorder: a distillation of a 2020 cochrane review for clinicians and policy makers. *Alcohol Alcohol* 2020;55(6):641–51.
34. Couto M. Canadians battling addiction in self-isolation turn to online AA meetings. *CTV News* 2020.
35. Cantor J, Laurito A. The new services that opioid treatment programs have adopted in response to COVID-19. *J Subst Abuse Treat* 2021;130:108393.
36. Caton L, Cheng H, Garneau HC, et al. COVID-19 adaptations in the care of patients with opioid use disorder: a survey of California primary care clinics. *J Gen Intern Med* 2021;36(4):998–1005.
37. Dunlop A, Lokuge B, Masters D, et al. Challenges in maintaining treatment services for people who use drugs during the COVID-19 pandemic. *Harm Reduct J* 2020;17(1):26.
38. U.S. Department of Justice - Drug Enforcement Administration. How to prescribe controlled substances to patients during the COVID-19 public health emergency. Springfield, VA: US Department of Justice -Drug Enforcement Administration; 2020.
39. Lam V, Sankey C, Wyman J, Zhang M. COVID-19 opioid agonist treatment guidance: 2020. Available at: [http://www.metaphi.ca/wp-content/uploads/2021/10/COVID19\\_OpioidAgonistTreatmentGuidance.pdf](http://www.metaphi.ca/wp-content/uploads/2021/10/COVID19_OpioidAgonistTreatmentGuidance.pdf). Accessed July 21, 2021.
40. Moreland A, Guille C, McCauley JL. Increased availability of telehealth mental health and substance abuse treatment for peripartum and postpartum women: A unique opportunity to increase telehealth treatment. *J Subst Abuse Treat* 2021;123:108268.
41. Volkow ND. Collision of the COVID-19 and addiction epidemics. *Ann Intern Med* 2020;173(1):61–2.
42. Samuels EA, Clark SA, Wunsch C, et al. Innovation during COVID-19: improving addiction treatment access. *J Addict Med* 2020;14(4):e8–9.
43. Castillo M, Conte B, Hinkes S, et al. Implementation of a medical student-run telemedicine program for medications for opioid use disorder during the COVID-19 pandemic. *Harm Reduct J* 2020;17(1):88.
44. Cole TO, Robinson D, Kelley-Freeman A, et al. Patient satisfaction with medications for opioid use disorder treatment via telemedicine: brief literature review and development of a new assessment. *Front Public Health* 2021;8:557275.
45. Mielau J, Vogel M, Gutwinski S, et al. New approaches in drug dependence: opioids. *Curr Addict Rep* 2021;1–8. <https://doi.org/10.1007/s40429-021-00373-9>.
46. Seddon J, Trevena P, Wadd S, et al. Addressing the needs of older adults receiving alcohol treatment during the COVID-19 pandemic: a qualitative study. *Aging Ment Health* 2021;1–6. <https://doi.org/10.1080/13607863.2021.1910794>.

47. Rosen D. Increasing participation in a substance misuse programs: lessons learned for implementing telehealth solutions during the COVID-19 pandemic. *Am J Geriatr Psychiatry* 2021;29(1):24–6.
48. Mellis AM, Potenza MN, Hulse JN. COVID-19-related treatment service disruptions among people with single- and polysubstance use concerns. *J Subst Abuse Treat* 2021;121:108180.
49. Drake C, Yu J, Lurie N, et al. Policies to improve substance use disorder treatment with telehealth during the COVID-19 pandemic and beyond. *J Addict Med* 2020;14(5):e139–41.
50. Prochaska JJ, Vogel EA, Chieng A, et al. A therapeutic relational agent for reducing problematic substance use (Woebot): development and usability study. *J Med Internet Res* 2021;23(3):e24850.
51. Marsch LA, Dallery J. Advances in the psychosocial treatment of addiction: the role of technology in the delivery of evidence-based psychosocial treatment. *Psychiatr Clin North Am* 2012;35(2):481–93.
52. Marsch LA. Digital Health and Addiction. *Curr Opin Syst Biol* 2020;20:1–7.