

**SAMHSA**

**Disaster Technical Assistance Center  
Supplemental Research Bulletin**

**Adaptations and Innovations for  
Delivering Mental Health and Substance  
Use Disorder Treatment Services During  
the COVID-19 Pandemic**

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The focus of the *Supplemental Research Bulletin* is to provide an overview of the current literature on a specific topic and make it easy to understand for disaster behavioral health professionals who are not otherwise exposed to the research. The product aims to assist professionals and paraprofessionals involved in all-hazards planning, disaster behavioral health response and recovery, and/or Crisis Counseling Assistance and Training Program grant activities.

Would you like to see a *Supplemental Research Bulletin* on a topic we haven't yet covered? Contact us with topic ideas and feedback via email at [dtac@samhsa.hhs.gov](mailto:dtac@samhsa.hhs.gov) or phone at 1-800-308-3515.

## INTRODUCTION

This issue of the *Supplemental Research Bulletin* focuses on adaptations and innovations in mental health and substance use disorder (SUD) treatment services during the COVID-19 pandemic. A previous issue of the *Supplemental Research Bulletin* (published in May 2021) reviewed preliminary research on the impact of the pandemic on mental health and substance use. This issue builds on that research, summarizing the adaptations that organizations have made to mental health and SUD treatment in the face of pandemic-related restrictions.

Like other disasters, the COVID-19 pandemic has resulted in sudden, unexpected loss of life and has at times overwhelmed the capacity of the healthcare system to respond to medical needs. Unlike other disasters, infectious disease outbreaks can leave physical property intact but disrupt the social supports needed for mental wellness—for months or even years (Substance Abuse and Mental Health Services Administration [SAMHSA], 2021, Chapter 5). Since the last bulletin related to the effects of the pandemic, more studies have been published measuring the comparatively longer-term effects of the pandemic on mental health and substance use (through 2020 and into 2021). These effects will be covered in a future bulletin; the focus of this update will be the timely sharing of the creativity, resilience, and perseverance of mental health and SUD programs in the face of an ongoing pandemic.

We have also chosen to focus this *Supplemental Research Bulletin* on interventions to support patients and community members rather than healthcare personnel. Although the mental health impacts of the pandemic on healthcare practitioners and other healthcare facility staff have been profound (and they may be experiencing substance use-related impacts too), this topic requires a separate, in-depth review recognizing the additional challenges for those who provide care during a time of widespread, serious illness.

This issue of the *Supplemental Research Bulletin* is based on literature and scientific publications found through the National Center for Biotechnology Information and U.S. National Library of Medicine (PubMed) database. All research cited in this issue was published in English, and most was conducted in the United States (with exceptions where investigations included a multinational sample). This issue contains research published between January 1, 2021, and November 15, 2021.

With the focus on innovation, many of the publications cited in this bulletin are case studies/series, observational studies, or other narrative or quasi-experimental studies. Understandably, capturing data on patient outcomes competes for resources with implementing the innovations to minimize disruption of services. Where possible, outcome or effectiveness data are included along with the description of the innovation. Evaluation data that shows how, where, and for whom these innovations are most effective will be needed to strengthen the argument for sustaining these innovations and prioritizing investments for future pandemics or shorter-term disasters.

## DISRUPTION OF SERVICES DUE TO THE COVID-19 PANDEMIC

Although pandemics are infrequent events, past research on pandemics, epidemics, and other disasters shows the harms caused by the intersection of increased disaster-related distress, the disruption of care, and the loss of access to coping strategies that support mental health and recovery (Kmeic, 2021; Li and Zhao, 2021; Murphy et al., 2021).

## Delayed, Deferred, and Refused Care

Pandemics of contagious diseases are especially disruptive as people isolate to protect themselves: a survey conducted in June 2020 (Czeisler et al.) found that 40.9 percent of adult respondents had avoided medical care due to concerns about COVID-19, including 12.0 percent who avoided urgent or emergency care. Prior to the pandemic, one review of data from the 2007 Health Information National Trends Survey estimated that a third of respondents (n = 7,674) avoided necessary medical visits (urgent or emergency care was not specified) (Kannan and Veazie, 2014). Although there may be some overlap (people who avoid care for other reasons may also report avoiding care due to COVID-19), there is other evidence of increased medical avoidance: people who received naloxone for suspected overdose during emergency medical calls in Tucson, Arizona, were twice as likely to refuse transport to emergency departments during the pandemic compared to before (as cited in Striley and Hoeflich's review, 2021).

Those who sought to receive care faced barriers from closures and distancing restrictions. A review by Murphy and colleagues (2021) on the impact of the pandemic on mental health found difficulties with medication management and reduced access to face-to-face mental health services and supports due to physical distancing restrictions and closures. For people with preexisting mental illness and/or SUD, stay-at-home or shelter-in-place orders can exacerbate conditions that lead to poor outcomes:

- Living in an unstable or unsupportive situation (or losing housing entirely) (Harris et al., 2021b)
- Losing supportive routines (including loss of employment and subsequent financial difficulties) (Murphy et al., 2021)
- Losing access to treatment and harm reduction services due to closures (Seaman et al., 2021; Taylor et al., 2021)
- Experiencing isolation in residential treatment facilities (Kedia et al., 2021; Pagano et al., 2021)

## Growing Unmet Needs for Mental Health Care and Substance Use Treatment

In addition to presenting problems for those with existing mental health and SUD treatment and service needs, the pandemic has increased unmet need for mental health care and SUD treatment. Alexander and colleagues (2021) found capacity and infrastructure limits prevented new patients from successfully accessing medication for opioid use disorder (MOUD) during the pandemic. Among respondents to a June 2021 survey of a nationally representative sample, 70 percent of those who provided unpaid care for someone else reported one or more adverse mental health symptoms, and a third of unpaid caregivers reported starting or increasing substance use (Czeisler et al., 2021). Hochstatter and colleagues (2021) collected survey data among users of a mobile health app for people living with HIV/AIDS that showed an increase in substance use (specifically, heroin, prescription opioids, cocaine, methamphetamine, and sedatives), an increase in being around people using drugs, and a decrease in confidence in ability to not misuse substances during the pandemic. Kedia and colleagues (2021) saw disruptions in court referrals to MOUD treatment for new clients as legal proceedings moved online (and judges were not always aware of available treatment options).

Even as of the publication of this newsletter, the COVID-19 pandemic continues. Effective vaccines and treatments have greatly reduced the risk of acquiring, transmitting, or becoming seriously ill or dying from COVID-19. Adaptations in the face of public health restrictions—such as changes in policy

and creativity from mental health and SUD prevention, treatment, and recovery organizations—have mitigated some of the challenges seen in the early part of the pandemic. The lessons learned from the innovations summarized below will be needed to respond to ongoing challenges and build resilience for future disasters.

## **INNOVATIONS AND ADAPTATIONS FOR DELIVERING MENTAL HEALTH SERVICES DURING THE COVID-19 PANDEMIC**

The single biggest area of change mentioned in the research literature is policy change involving expanded access to telehealth (Haque, 2021), most notably changes in the Health Insurance Portability and Accountability Act of 1996 (HIPAA) that allowed for widely available video calling software (such as Apple FaceTime) to be used for telemedicine (Notification of Enforcement Discretion, 2020) and changes to payment and billing that make it easier for providers to bill and be reimbursed for providing telehealth services, including mental health and SUD services (U.S. Department of Health and Human Services [HHS], 2022). Some payers, such as TRICARE, the healthcare program for uniformed service members, retirees, and their families, increased access by approving payment for audio-only care and waiving payments/cost-sharing for mental health and SUD services during the public health emergency (Defense Health Agency, 2018; Clark, Fan, et al., 2021). While state policy and private payer decisions vary (including as to whether they will be made permanent), this shift has allowed mental healthcare professionals a way to deliver services at a distance.

### **Definitions**

The rapid expansion of telehealth has resulted in new terms to describe remote health care, many of which include or overlap with other terms. Below are some definitions suggested by leading medical associations and HHS. These definitions are used throughout the bulletin unless otherwise specified by the authors or the implementers of an intervention.

**Telehealth:** Use of electronic and telecommunications technologies and services to provide health care and services at a distance. Includes **telemedicine, mental and SUD-related telehealth (telepsychiatry, teletherapy)**, and other services (American Academy of Family Physicians [AAFP], 2022).

**Telemedicine:** The practice of medicine using technology to deliver clinical services remotely (AAFP, 2022).

**Mental health and SUD-related telehealth:** This application of telehealth to mental health and SUD services includes remote mental health services (**teletherapy, telepsychiatry**) and remote treatment for SUD (U.S. Department of Health and Human Services, n.d.).

**Telepsychiatry:** A subset of telemedicine that can involve providing a range of services including psychiatric evaluations, therapy, patient education, and medication management (American Psychiatric Association, 2020).

**Teletherapy:** Delivery of individual (one-on-one) or group therapy using electronic and telecommunications technology. It can include virtual talk therapy, text therapy, and user-directed technologies like chatbots or apps with tools to support self-management (HHS, 2021a, 2021b).

## **Benefits and Challenges of Adopting Telehealth**

Sadicario and colleagues (2021) detail a case study of an integrated women’s healthcare and SUD treatment team that transitioned to telehealth services during the pandemic. In this case study, providers note benefits for patients (elimination of transportation barriers, flexibility in scheduling) and challenges in building rapport and trust with new patients. The authors recommend specific telepsychiatry training and mentors/peer supervisors for providers new to the process, as well as developing processes for maximizing the benefit of coordinated care between distanced providers. In a commentary, Carlo, Barnett, and Unützer (2021) suggest that a collaborative care model like the one in the Sadicario et al. case study could utilize the expansion of telehealth to deliver collaborative care by connecting providers across facilities, better integrating mental health care into primary care.

Arnold and colleagues (2021) found that adopting telehealth for their community-based organization (CBO) serving men who have sex with men reduced no-show visits. In addition to reaching their clients remotely, they provided a private, isolated space at the CBO location for “in-person” telemedicine visits where clients could use a laptop to access video calls with a provider. Langabeer, Yatsco, and Champagne-Langabeer (2021) observed a small increase in participation in individual therapy and peer recovery groups when they switched their SUD treatment organization to a telehealth model. Komaromy and colleagues (2021) observed a decrease in no-show rates from 40 percent (prior to the pandemic and implementing telehealth) to 30 percent when they converted their multidisciplinary program for youth with SUD to a telehealth model. (This intervention also included text messaging and “on the fly” telehealth check-ins for crisis management, which is unique among the innovations in this review.) For Sadicario and colleagues, telemedicine did not reduce no-shows, but they noted that other factors may affect attendance (such as childcare emergencies).

Although telemedicine can reduce patient barriers to participation, several studies found that telemedicine generally did not save time for clinicians. Sadicario and colleagues encountered late or missed appointments even with telehealth, which resulted in needing to make quick changes to tight schedules. Langabeer, Yatsco, and Champagne-Langabeer were not able to find any increased efficiency to serve more patients, even after getting experienced delivering telehealth.

This section summarizes some of the challenges for mental health and SUD service and treatment providers and organizations in adopting telehealth. Policy changes have increased access to telehealth for those clients who possess the information technology to connect to telehealth systems; disparities in technology and internet access can become healthcare disparities in telehealth approaches (Darrat et al., 2021). These disparities and additional considerations for telehealth—including the limitations of remote services and the needs of special patient populations such as youth living with parents—are covered in the Remaining Challenges section at the end of this bulletin.

## **Utilization and Acceptability of Telehealth for Mental Health and SUD Services**

Telehealth can offer patients and clients flexibility in participating and increase participation in treatment and services. Through a survey of members of a general mental health Facebook group, Costa and colleagues (2021) found that 8 percent of respondents had started therapy with a new practitioner by video session, and 33 percent had switched from in-person to video sessions. However, 33 percent of respondents preferred in-person to video sessions, compared to only 3 percent who preferred video to

in-person sessions. Clark, Fan, et al.'s analysis of U.S. service members' utilization of mental health and SUD telehealth (2021) found that telehealth visits in 2020 remained higher than telehealth usage in 2019 and in-person outpatient visits, even after visits increased following the first 2 months of the pandemic.

For counseling as part of SUD treatment, telemedicine may offer patients flexibility that helps boost participation. Hughto and colleagues (2021) were able to provide telehealth services for new patients who were otherwise unable to utilize their outpatient MOUD clinic; however, they also observed disparities in the ability to access telehealth at home and noted that providing equipment for telehealth at the clinic did not remove many of the barriers to access (transportation, COVID-19 exposure risk) for those patients. Sugarman and colleagues (2021) found that 90 percent of those in an SUD program that switched to telehealth were very satisfied with individual teletherapy counseling, less so with group therapy (only 60 percent were very satisfied). The majority of respondents preferred strongly or slightly preferred telehealth only, but a significant portion preferred a mix of telehealth and in-person visits for individual therapy (25 percent), group therapy (19 percent), and medication management (22 percent). In the case series by Komaromy and colleagues (2021), most patients in a program for co-occurring mental illness and SUD preferred a telehealth option.

Martin and colleagues (2021) examined acceptability from the perspectives of counselors working in opioid treatment programs (OTPs) across Rhode Island. While the vast majority (69 percent) reported being somewhat or very satisfied with providing telephone counseling, the most frequently mentioned concern was the difficulty building rapport and observing nonverbal communication in phone calls. However, they appreciated that this distanced option was also more convenient for clients, and only 9.5 percent of counselors reported that a client relationship had worsened since introducing telephone counseling. While many of the authors in this review acknowledge the drawbacks to mental health and SUD-related telehealth, two (Bergman et al., 2021; Fiacco, Pearson, & Jordan, 2021) noted that telemedicine allowed organizations to offer some form of services during the pandemic.

### **Other Innovations To Support Mental Health**

In addition to telepsychiatry or tele-counseling, digital mental health tools, self-management innovations, and other approaches intended for lay people to boost mental health have been used by many during the pandemic to cope with distress. For example, an online therapy company (Talkspace) saw a 65 percent jump in new users in May 2020 (Masand et al., 2021). Sorkin and colleagues (2021) found that those experiencing symptoms of depression or anxiety were three to six times and two to three times as likely to use digital mental health apps, respectively, during the pandemic. The benefit of these interventions is that they may be more quickly accessible than traditional mental health and SUD care (which depends on facility and practitioner availability for new patients). Sorkin and colleagues also point out that "accessibility" of digital or mobile health (mHealth) tools requires being aware of the resource, having the resource available in accessible language (plain language as well as languages other than English), and having the needed technology and skills to use the tools successfully. Additionally, few mobile app developers have published peer-reviewed evidence of apps' feasibility or effectiveness (Sorkin et al., 2021).

Kunzler and colleagues (2021) reviewed community mental health and psychosocial support strategies for highly contagious disease outbreaks (such as Middle East respiratory syndrome [MERS] or Ebola), finding relatively few examples of effective interventions and low-quality evidence overall.

(Understandably, many interventions responding to the COVID-19 pandemic have not yet published results.) The component of mental health or psychosocial interventions that had the strongest supporting evidence was a combination of providing factual information while teaching psychological strategies to manage distress (training to strengthen resilience factors and coping strategies). Kunzler and colleagues note that higher levels of COVID-19 knowledge and resilience factors have been shown to be protective against pandemic-related distress in other studies, and they recommend these as a starting point for individual-, organizational-, or community-level interventions.

Based on the evidence linking mental health to exercise and physical activity, many distress self-management interventions have suggested ways to safely increase physical activity (such as Ghram and colleagues' recommendations for older adults, who are at heightened risk for COVID-19 and increased sedentary behavior). However, the effectiveness of physical activity alone on managing distress may be limited: Giuntella and colleagues (2021) found no impact on depression symptoms from a short-term (2-month) intervention to reverse drops in physical activity among young adults during the pandemic.

Similarly, many well-intentioned recommendations focused on creative ways to maintain a social network to support mental health during physical distancing and isolation. Sahi and colleagues (2021) examined different aspects of a "virtual social network" to understand which were most associated with improved mental health. They found that, for the university students in their study, having a larger social network (more individuals) and spending time with virtual connections on a weekly basis were associated with better mental health outcomes (frequency of contact was not as important as total time spent on a regular basis). Although this research focused on young adults (who may have different social needs and relationship priorities than people in other life stages), fostering a larger virtual social network may mitigate the loss of casual social interactions when routines are disrupted (such as being a regular customer at a neighborhood restaurant).

Kahlon and colleagues (2021) designed an intervention to create these social ties among participants in a Meals on Wheels program in Texas. Young adult volunteers were trained on empathic listening techniques designed to engage program participants over the phone in conversation on participants' topics of choice. Calls were initially designed to last 10 minutes but were not time-limited, and many did run longer. In the first of the four intervention weeks (July–August 2020), participants received five calls, after which they could choose their frequency (between two to five calls per week). Compared to the control group (who received the baseline Meals on Wheels services), participants in the intervention group showed greater decreases in reported loneliness and in depression and anxiety scores. (Participants in the control group experienced a slight increase in depression and anxiety scores during the study period.) Ultimately, Kahlon and colleagues found this intervention to be easily deployable, scalable, and effective.

## **INNOVATIONS AND ADAPTATIONS TO DELIVERING SUD SERVICES DURING THE COVID-19 PANDEMIC**

As described above, policy and payment changes opened up the widespread use of telehealth modes for mental health and SUD services. For SUD treatment and MOUD in particular, specific policy changes allowed practitioners to initiate and maintain prescriptions by video- or audio-only appointments and to dispense telephone or faxed prescriptions (Clark, Davis, et al., 2021; Li and Zhao, 2021; Livingston et al., 2021; Quiñones et al., 2021). Other policy changes allowed for take-home supplies of methadone



and pickup/drop-off by a trusted person other than the patient (Cantor and Laurito, 2021). Due to the ongoing opioid use epidemic, the majority of the articles about SUD treatment in this bulletin focus on treatment of people with opioid use disorder (OUD), but the bulletin also includes some examples of treatment of people with tobacco dependence, alcohol use disorder, and SUD in general (including but not limited to OUD).

## Telemedicine for SUD

Access to SUD treatment services, especially MOUD, reduces the risk of overdose and other opioid-related harms (Wakeman et al., 2020). In a cohort study of Massachusetts overdose survivors, receiving buprenorphine or methadone maintenance therapy in the year following an overdose reduced opioid-related mortality as well as overall, all-cause mortality (Larochelle et al., 2018).

As described above, implementing telehealth allowed SUD treatment facilities to maintain services and accept new patients when the strictest physical distancing measures were in place. When Fiacco and colleagues (2021) converted their care of patients with SUD to telemedicine, they reduced no-show rates (including achieving a zero no-show rate for new patients in May 2020). Hughes and colleagues (2021) compared patient characteristics after the implementation of telemedicine for office-based OUD treatment and found that patients with the farthest driving distance were more likely to use telemedicine for visits. Not surprisingly, the clinic also saw the largest increase in MOUD patients from rural counties within their catchment area, reflecting the benefit of telemedicine for those patients. Kotsen and colleagues (2021) successfully transitioned from in-person to telehealth modes for the counseling portion of a tobacco treatment program for tobacco-dependent cancer patients at Memorial Sloan Kettering. When controlling for the date of the appointment (before or after the pandemic), a telehealth visit had 2.3 times the odds of completion compared to an in-person visit.

Several studies examined the impact of changes in buprenorphine prescription guidelines that allowed providers to initiate treatment regimens based on video- or audio-only appointments. Clark, Davis, and colleagues (2021) describe a partnership between the Rhode Island Department of Health and the Department of Behavioral Health, Developmental Disabilities, and Hospitals that used telehealth to quickly connect patients to buprenorphine treatment. The partnership established a 24/7 buprenorphine hotline that offered callers the ability to be connected to a waived practitioner for an initial assessment via telephone. (If appropriate, patients are co-prescribed buprenorphine and naloxone and are emailed induction instructions and local resources for harm reduction, community support, and mental health and SUD treatment.) Hospitals also partnered to refer patients who were treated in the emergency department for an overdose but who were not currently connected to an MOUD program. Although this program has not been evaluated, hotline callers have shared that this innovation allowed them to enter treatment, and the primary outpatient clinic has seen a 50 percent reduction in no-show rates for follow-up telehealth appointments. As described in Komaromy and colleagues (2021), connecting people to services quickly after their decision to seek treatment has positive effects on engagement and retention.

In a case series of two harm reduction programs from Wang and colleagues (2021), telehealth initiation of buprenorphine reduced wait times from local organizations that had suspended or reduced their buprenorphine services during the pandemic. Wang and colleagues are also developing a similar program to the one described in Rhode Island that would connect people being treated for overdose to a real-time assessment for buprenorphine initiation.

Caton and colleagues (2021) found that primary care clinics offering OUD treatment in California were more likely to offer telehealth appointments for follow-up MOUD appointments than for initial MOUD appointments (40.4 percent clinics vs. 23.1 percent of clinics, respectively), with 7.7 percent of clinics requiring initial medication visits be in-person only. While 31.6 percent of clinics found it easier to engage patients, 26.3 percent found it harder, and 24.6 percent saw no change.

## **BENEFITS OF TELEMEDICINE FOR SPECIFIC POPULATIONS**

While telemedicine addresses some barriers people have faced before and during the pandemic (e.g., lack of access to transportation, lack of childcare, the need for physical distancing to reduce the spread of COVID-19), it is not appropriate for everyone, as it requires a degree of familiarity and facility with telemedicine technology and an internet connection sufficient to support telemedicine. To address some of the barriers telemedicine entails, interventions have been developed that combine mobile services and telemedicine, one of which is described by Weintraub and colleagues (2021) as a way to reach a rural population in an area with no public transportation. The team reports on a study of the intervention, which involves a mobile services unit (a modified recreational vehicle with telemedicine technology) with clinical staff (a nurse, peer recovery specialist, and substance use counselor) that can be deployed to rural areas as a hybrid, mobile clinic offering some care via telemedicine. This mobile clinic reduced driving distances by an average of 6.52 travel miles (compared to nearest permanent MOUD facility) and had comparable outcomes in opioid use reduction and treatment retention to brick-and-mortar MOUD treatment in other rural communities (a reduction of use by one-third, and a 60 percent retention rate at 3 months).

For youth with SUD, telehealth offers opportunities to engage families in the MOUD treatment process and improve patients' outcomes. Hogue and colleagues (2021) describe cases where telehealth was used to conduct initial outreach and planning for family-supported MOUD, educate parents and family members about MOUD, build family members' skills in providing psychosocial support, and help family members participate in long-term follow-up.

Pregnancy can be a major motivation to initiate SUD treatment (Jones et al., 2021), but it can be challenging to access treatment when pregnant: a survey of North Carolina buprenorphine clinics found that, prior to the pandemic, nearly half had turned away pregnant patients, increasing to two-thirds during the pandemic (Lensch et al., 2021). Changes in prescribing guidelines and increased use of telehealth can be particularly beneficial for pregnant patients who wish to begin a buprenorphine treatment regimen but are unable to access it locally. Patton and colleagues (2021) successfully integrated telemedicine for buprenorphine into their clinic's hybrid model for providing coordinated SUD treatment and prenatal care and suggest that pregnant patients be recommended for take-home medication status.

## **Take-home Dosing for MOUD**

Prior to the pandemic, regulations on MOUD included strict criteria regarding which patients were eligible for take-home medication, with consideration of such factors as absence of recent drug use, stability of social relationships, and ability to safely store MOUD (SAMHSA, 2015). Joseph and colleagues (2021) also note that OTPs are incentivized to maintain dosing through in-person attendance because of reimbursement policies and the benefits available in a clinical setting (such as wraparound care and referrals). In response to the pandemic, states could request exceptions to these criteria (up to 28 days of take-home medication for stable patients, and up to 14 days for less stable patients) (SAMHSA, 2020).

Joseph and colleagues (2021), working in the State of New York, began with reducing clinic visits (and increasing take-home dosing) for patients at greatest risk of death from COVID-19. The clinics also eliminated toxicology testing from their guidance for MOUD dosing schedules, instead focusing on treatment engagement and accomplishment of goals set with patients. Dosing could also be quickly adjusted in case of incidents of misuse or diversion. From March 16, 2020, through May 31, 2020, over 3,600 patients were maintained in MOUD treatment with 6 nonfatal overdoses and no fatal overdoses. (In the period just prior—January 1, 2020, to March 15, 2020—there were 2 nonfatal overdoses and 1 fatal overdose.)

### **Changes to In-person Services for Outpatient Treatment**

Almost all clinics and facilities mentioned in this bulletin had to suspend or reduce in-person services, especially during the early part of the pandemic when the most stringent distancing measures (such as shelter-in-place orders) were in effect. Many OTPs still needed to provide some in-person services, especially as the pandemic continued, and adopted the following adaptations to reduce risk but maintain service.

Many clinics reported reducing patient volume in order to accommodate distancing protocols and reduce the risk of exposure events (Becker et al., 2021; Kedia et al., 2021; Quiñones et al., 2021). Clinics also provided personal protective equipment (PPE) to staff and implemented sanitization protocols, but they often faced challenges in acquiring needed supplies (Quiñones et al., 2021). As described earlier, many clinics shifted in-person visits to telehealth where possible (to reduce in-person volume), and many implemented “virtual” visits using isolated telemedicine stations at clinic locations. To mitigate exposure risk, many OTPs suspended their peer recovery coaching and volunteer programs (in order to reduce the number of individuals on site and coming into contact with patients) (Kedia et al., 2021; Kleinman et al., 2021). In addition to potentially putting additional burden on staff, the loss of opportunities to provide peer recovery services disrupted an important, meaningful part of those patients’ treatment plans. As with clinical and counseling staff, peer recovery coaches or volunteers may need training and support to transition their activities (where appropriate) to a remote or hybrid model.

Patients with SUD who did not have stable housing were particularly challenged during the pandemic, and the isolation sites set up for people experiencing homelessness were not always equipped to provide SUD services. In Puerto Rico, a clinic serving a large number of unsheltered people began outreach programs combining COVID-19 education with harm reduction strategies (Quiñones et al., 2021). Tringale and Subica (2021) describe adaptations to a syringe services program (that also provided medication for addiction treatment), which set up private “booths” at the building entrance to conduct medication-assisted treatment (MAT) visits. This program also partnered with local pharmacies to boost the capacity for dispensing buprenorphine prescriptions, reducing wait times and crowding for patients.

Harris and colleagues (2021a, 2021b) describe the integration of addiction consult services into recovery and isolation sites for COVID-19 patients with SUD, developing safe isolation and recovery programs and connecting discharged patients to MAT to close the gap between acute treatment (for COVID-19 and managing withdrawal) and programs for housing and treatment support for people with SUD that were not set up for COVID-19-positive patients. Komaromy and colleagues (2021) developed a temporary residential treatment facility for patients with co-occurring SUD and COVID-19 that could be managed

in an outpatient setting. Patients were supported with medication as part of SUD treatment through their COVID-19 recovery and connected to outpatient SUD treatment following their discharge from the COVID-19 recovery unit.

### **Changes to Residential and Inpatient Treatment Services**

Residential treatment programs were particularly disrupted due to distancing restrictions, which changed workflow for practitioners and prevented families, sponsors, counselors, and support groups from visiting existing patients in person. Changes that reduce in-person staff can increase feelings of isolation, as found in Clair and colleagues' qualitative study of participants in a U.S. Department of Veterans Affairs (VA) residential treatment program (2021). In this case, shifts to telemedicine were not well communicated, leaving patients feeling "cut off" from providers and limited by changing information (and policy implementation) depending on which staff members were working on site.

Residential OTPs also reduced patient census as part of their distancing protocols, which decreased available beds for new patients. Kedia and colleagues (2021) observed both of these in their case report from Appalachian Tennessee and noted that the loss of reimbursement for services required several agencies to take loans in order to cover operations. Throughout the pandemic many treatment facilities developed creative solutions that mitigated some of the social isolation: providing spaces for accessing telehealth services, investing in broadband internet for videoconferencing, and creating outdoor meeting and socialization spaces (Kedia et al., 2021). One important lesson highlighted by Kedia and colleagues is that disaster plans for residential treatment facilities should include long-term plans for patients who cannot be safely discharged during a disaster. Especially during highly contagious disease outbreaks, epidemics, or pandemics, people who lose access to stable living situations can also lose access to housing services if they become infected or exposed (as highlighted by Harris and colleagues [2021b]).

### **Changes to MOUD Provided in Jails and Prisons**

Access to MOUD in correctional facilities was already limited at the beginning of 2020, and the disruptions of SUD treatment due to the pandemic increased acutely with facilities' COVID-19 responses, which included rapid decarceration, quarantine of those who tested positive for COVID-19, and suspension of mental health and SUD services to reduce in-person contact or because locations were needed for isolation and recovery areas (Donelan et al., 2021; Duncan et al., 2021; Rowell-Cunsolo et al., 2021).

Donelan and colleagues describe the response in Franklin County, Massachusetts, where MOUD was delivered in housing units (rather than a group setting) or directly to cells for individuals under quarantine. The jail obtained technology grants to set up individual teletherapy appointments and provided individual workbooks after group therapy sessions were cancelled. Recognizing that individuals who were rapidly released (either because of greater risk from COVID-19 or because of court policy rulings) could lose access to MOUD, the Franklin County Sheriff's Office successfully advocated for extension of Medicaid coverage through this period, added telehealth options to the post-release program, provided take-home medication more widely under the new guidelines, and secured housing for recently released individuals.

In Hennepin County in Minnesota (Duncan et al., 2021), the implementation of telemedicine and changes in buprenorphine initiation policy allowed the jail to provide buprenorphine (either initiation, maintenance, or taper dosing) during short-stay periods (36 hours or less), which had historically been challenging.

However, Duncan and colleagues also noted that the jail was limited in its ability to follow up with individuals post-release and that responding to the COVID-19 pandemic required resources that may be difficult to sustain without policy changes to increase reimbursement for MOUD and telemedicine services provided in jails and prisons.

### **New Technological Devices To Support MOUD**

Dunn et al. (2021) conducted a randomized controlled trial of an electronic pillbox for dispensing split-dose methadone for take-home dosing. These electronic pillboxes open at a programmed time to promote medication adherence, and the timing could be adjusted by consultation with staff. The pillbox also sent dosing reminders to patients' and staff's cell phones and could send alerts (via text or email) about unexpected events (such as loss of connection, low battery, or failure to take the dose). In a participant survey, the majority of patients liked the pillbox (86.3 percent) and said they would recommend it to others (95.4 percent), but only half (52.4 percent) continued using the pillbox during the "choice" part of the trial (where patients could resume their usual dosing or keep using the electronic pillbox). Dunn and colleagues theorize that the requirement to bring the pillbox to daily appointments may have influenced the decision to keep using it and note the potential of this innovation for longer periods with take-home patients who face challenges in safely storing MOUD.

McDonnell and colleagues (2021) offer a digital health technology intervention at their clinic that consists of (1) a wearable device to detect biomarkers of craving and stress, (2) a mobile app of dialectical behavior therapy-based interventions and immediate connection to clinicians, and (3) a clinician-facing portal showing insights to the care team. Clients with alcohol use disorder are also offered a wireless breathalyzer that reports results or missed tests to their care team. McDonnell and colleagues acknowledge that more data on the efficacy of these tools are needed, but the remote data collection capabilities have supplemented the shift to telehealth necessitated by the pandemic.

### **Online and Remote Peer Support Innovations**

Online peer support groups preceded the pandemic and range from formal, structured groups linked to a clinic or OTP to general support forums maintained on social media. During the pandemic, however, these resources had the benefit of being immediately available (and often at no cost to participants) as organizations developed ways to mitigate the loss of in-person services (Bergman & Kelly, 2021).

Bunting and colleagues (2021) studied early pandemic activity on forums on the social networking site Reddit.com. Forum members shared how their daily lives had changed, offered or asked for advice, and provided mutual aid to each other. This mutual aid could take the form of general psychosocial support, connecting other members to local support resources, providing advice on and experience with accessing MOUD during the pandemic, sharing scientific information on MOUD and SUD, and offering ideas or stories for how to support recovery (such as reminders to engage in exercise or ideas for entertainment/distraction).

Prior to the pandemic, Liese and Monley (2021) had established mutual help recovery programs in Douglas County in Kansas that were staffed by volunteers (including community members, mental healthcare professionals, peer support specialists, and individuals who had participated in other peer support groups). During the pandemic, volunteers developed and conducted training on adapting the

group programming to one-on-one telephonic interventions. Although Liese and Monley acknowledge that this study lacks data on efficacy of the adaptation, they provide an example of how volunteers can be leveraged for outreach, follow-up, and education with minimal investment (beyond what is needed for training).

At the time of publication of this bulletin, data on the efficacy of teletherapy or remote peer support groups (for recovery or other positive outcomes) during the pandemic is lacking. Bergman and colleagues (2021) summarize the evidence for digital support programs before the pandemic, concluding that they offer benefits for mitigating the public health burden of the pandemic (but not necessarily replacing services lost during the pandemic). When considered as part of a broad social network, these peer recovery groups may offer the mental health benefit of having a large, diverse, and regularly connected virtual social network described by Sahi and colleagues (2021).

### **Adaptations for Providing Harm Reduction Supplies**

The closure or reduction of in-person services also required creativity in distributing harm reduction supplies like sterile syringes or naloxone. For organizations that maintained in-person distribution, this included providing PPE for staff, requiring masks, sanitizing surfaces, moving services outside, and creating workflows to maintain 6 feet between individuals (Seaman et al., 2021). In rural areas, some syringe providers continued services or switched entirely to mobile distribution to protect clients (Ostrach et al., 2021). Seaman and colleagues also found that individuals who utilized syringe services programs engaged in their own risk reduction strategies, such as obtaining larger amounts of syringes to reduce the need for visits and prioritizing safer injection to avoid needing additional medical care. Courser and Raffle (2021) describe the changes to a take-home naloxone program—such as hosting “drive through” events, outdoor training sessions, and promoting mailed naloxone—that increased distribution rates of naloxone above pre-pandemic levels.

One study (French et al., 2021) and one review (Barnett et al., 2021) describe mail-based naloxone and clean syringe distribution through the Needle Exchange Technology (NEXT) Distro program. NEXT Distro began in New York City in 2017 to offer safe, mail-based needle exchange (including materials for handling used syringes), but now has partnerships in 32 states for naloxone distribution as well. In French and colleagues’ study of NEXT Distro participants in Philadelphia, the most common barrier to naloxone access was not knowing how to access it (in spite of local regulations that all pharmacies are required to stock naloxone). Barnett and colleagues also cite misperceptions about the legality of obtaining naloxone (including the stigma of requesting it from a pharmacy). This may be related to the complex patchwork of regulations around purchasing safe injection supplies, including store policies, quantity limits, and paraphernalia laws (Barnett et al., 2021; Peckham et al., 2021).

### **OTHER PHYSICAL, MENTAL HEALTH, AND SUD TREATMENT SUPPORT INNOVATIONS**

Evidence from integrated healthcare systems that include mental health and SUD treatment and services and social supports, such as the VA, show that these comprehensive services can dramatically improve outcomes in the face of a pandemic. Kelly and colleagues (2021) examined COVID-19 outcomes among individuals with behavioral risk factors who obtained care from the VA and found that social and behavioral support programs eliminated the associated mortality risk. Several programs described

in articles included in this bulletin purposefully integrate SUD treatment into medical care, and more programs have used the trusted relationships from SUD care to address needs during the pandemic: Komaromy and colleagues (2021) added a mobile vaccination unit to their SUD program for parents of infants and toddlers to reduce any drop in childhood vaccination rates due to the pandemic. They also distributed cell phones to patients in an office-based SUD treatment program who would not otherwise be able to access telehealth modes of care. Ostrach and colleagues (2021) utilized their syringe services programs to provide PPE, sanitization supplies, and COVID-19 prevention information to clients.

## REMAINING CHALLENGES

Just as the risks for COVID-19 are unequally distributed (from co-occurring conditions or circumstances that put individuals at greater risk for exposure *and* greater risk for poor outcomes), the benefits of adaptation and innovation can be unequally received, and those most at risk for poor mental health and SUD-related outcomes are also the least able to take advantage of these shifts. Nguemeni Tiako (2021) observed racial disparities on MOUD that were perpetuated during the COVID-19 pandemic, including reduced access to buprenorphine for individuals of other races compared to White individuals; comparatively lower use of telehealth for mental health or SUD services; and decreases in visits from Black and Hispanic (but not White) patients when in-person services reopened.

### Mental Health and SUD Services and the Digital Divide

Across studies and commentary included in this review, authors acknowledge a “digital divide” that perpetuates health disparities through technological disparities. Many communities have been left out of investments in broadband internet and cell service, resulting in areas where receiving telehealth at home is not possible, even if devices are provided. As of 2020, 22.3 percent of rural residents and 27.7 percent of residents of tribal lands lacked high-speed internet (Federal Communications Commission, 2020; Murphy et al., 2021). Even when the infrastructure is available, such as in urban and suburban areas, this does not guarantee access to the information technology needed for telehealth. A recent study of structural barriers and COVID-19 mortality by Lin and colleagues (2022) identified higher mortality rates in rural, suburban, and urban locations with limited internet access. Mental health and SUD treatment professionals operating in these areas can face the same bandwidth challenges in providing mental health and SUD services via telehealth for clients, and they also need to invest resources in technology purchases, physical space, and staff training to successfully implement telehealth programs (Kotsen et al., 2021; Pagano et al., 2021).

Another aspect of “access” is familiarity/fluency with the technology needed to participate in telehealth visits. Kotsen and colleagues (2021) found that older participants (those age 65 to 80) had the most difficulty successfully participating in tele-counseling for tobacco dependence and SUD. Due to their increased risk for COVID-19, older adults (especially those in residential or long-term care facilities) are most likely to be subjected to the strictest isolation protocols, making them uniquely vulnerable to absence of social support (Bethell et al., 2021). Rosen (2021) recommends tackling this divide precisely because of these vulnerabilities and the potential for benefit that virtual social support and medical care could provide.

## **Limitations of Remote Services**

Even for those who are able to access telehealth, there are drawbacks to a remote approach to mental health and SUD treatment services via telehealth that need to be weighed against the benefits of potential for expanded access. Hughto and colleagues (2021) warn that the intensity of treatment programming (such as day programs with several hours of activities) may be “overwhelming” when delivered via telehealth. Lack of stable housing or a private place to make calls is a major barrier (Boldt et al., 2021; Davison et al., 2021; Hughto et al., 2021), especially for mental health and SUD care where privacy concerns may be higher than for other health conditions (Murphy et al., 2021). Several authors also raise concerns about the ability to assess risks for violence in the home during telehealth sessions (Boldt et al., 2021; Jones et al., 2021).

Although telehealth delivery of mental health and SUD services may be preferable to a complete absence of services, the vast majority of authors expressed desire to return to some in-person activity, citing the value of in-person connection for establishing trust with new patients (Jones et al., 2021); offering structure and socialization for volunteers and peer recovery specialists (Kleinman et al., 2021); and creating social spaces for culturally important activities that are part of the healing process, such as religious and spiritual practices. (Bethell et al., 2021; Wendt et al., 2021). For harm reduction services, the ability to offer screening for HIV and the hepatitis C virus along with offering naloxone or sterile syringes can only happen with in-person services (Seaman et al., 2021; Taylor et al., 2021; Wenger et al., 2021).

## **Limited Data on Mental Health and SUD Treatment and Service Innovations for Youth**

Most of these innovations focused on mental health and SUD services for adults, or at most, young adults (i.e., older teens) as the primary patient. For parents of younger children, telemedicine diagnosis of mental or physical healthcare or SUD treatment needs is difficult, and telehealth cannot replace the loss of community services (Aishworiya and Kang, 2021). A review by Okuyama and colleagues (2021) found limited data on interventions for children and adolescents during disasters that created similar restrictions on school and social routines, and two other observational studies included in this bulletin (Perkins et al., 2021; Rosen et al., 2021) make recommendations based on survey findings, not implementation: strengthening routine (especially sleep hygiene) and building a sense of “social connectedness” (a feeling of belonging, availability of friendship) among peers (in Perkins and colleagues’ study, school/classmates). As with mental health and SUD interventions via telehealth, investments in remote learning may offer opportunities to build resilience interventions. Sarvey and Welsh (2021), in their recommendations for increased screening for SUD in adolescents, noted that increased use of telemedicine for SUD treatment may offer opportunities for more participation among adolescents, as it has for adults (due to access to a wider geographic range of professionals and elimination of the need for transportation).

## **Gap Between Mental Health and SUD Care and Broader Health System Highlighted by Pandemic Response**

Finally, this bulletin provides evidence to support the importance of integrating mental health and SUD treatment and services into the broader system of both physical health and social support (Kelly et al., 2021). Pagano and colleagues (2021) briefly describe how the fragmenting of SUD treatment and



services led to challenges in obtaining PPE and cleaning supplies for SUD treatment facilities. In their survey of MOUD practitioners in the VA, Kelley et al. (2021) cite lack of protected time for MOUD as the biggest barrier to providing MOUD services among practitioners who are not dedicated SUD specialists. Peckham and colleagues (2021) provide recommendations for leveraging community pharmacists to expand access to MOUD (citing precedent for pharmacists administering long-acting injectable medications), but note that the institutional, regulatory barriers around opioid prescriptions (ostensibly to monitor and reduce misuse) create disincentives to treat MOUD like other medications and SUD like other health conditions.

## CONCLUSION

In the face of a protracted disaster such as the COVID-19 pandemic, mental health and SUD services displayed resiliency and creativity in adapting their services to continue providing care while reducing their patients' risk for acquiring or transmitting COVID-19. For many patients, widespread adoption of telehealth was a welcome benefit that eliminated barriers to getting into and staying in care. For other patients left behind by the digital divide, seeing the same benefit will require organizations' investments in technology, training, workforce, and programming. Important policy and payment changes have made many of these adaptations feasible for the first time, and many authors included in this bulletin expressed uncertainty over whether these changes will become permanent. As organizations begin and continue to resume "pre-pandemic" services, the most meaningful lesson learned may be that thoughtful investment (including building an evidence base) is the best way to build resilient, interconnected systems of care that improve outcomes before, during, and after future disasters.

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