

COVID-19 Pandemic Instigates Rapid Healthcare Industry Technology Adoption

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In 2020, there were more than 81,000 drug overdose deaths (Sokolow, 2020). This represents a 38% increase over the previous year. This spike is significant and can be attributed to the disruption in daily life because of the COVID-19 pandemic (Buddy, 2021; Merrill, 2021; Statista, 2020). Before the COVID-19 pandemic, individuals wanting to recover from a substance use disorder (SUD) already faced numerous financial, transportation, and work/life schedule barriers (Substance Abuse and Mental Health Services Administration, 2021). These barriers increased with the “stay at home” orders mandated by states in the United States. Other unfortunate side effects presently revealed from the “stay at home” orders include increased alcohol consumption (Grossman et al., 2020), illicit drug use (Grossman et al., 2020), depression (Vindegard & Benros, 2020), and obesity (American Psychiatric Association, 2021). To treat these illnesses during the pandemic, Medicaid and Medicare services permitted the use of remote videoconferencing, that is, telehealth technologies (U.S. Department of Health & Human Services, 2020). This inclusion of technology expanded the treatment options available from the behavioral health industry, presenting a more acceptable paradigm for virtual care.

Although telehealth technology has been available for quite sometime (Samuels et al., 2020), the behavioral health industry has been slow to adopt these technologies. The primary hindrance to the industry's adoption of telehealth was billing and licensing restrictions. To continue treating substance abuse and mental health during the COVID-19 pandemic, these restrictions were loosened and telehealth solutions for ther-

apy appointments were quickly incorporated into treatment services. By embracing telehealth technologies, the geographic and transportation barriers for the client decreased and increased the likelihood of clients attending their appointments. Although adherence to appointments improves, information barriers about treatment compliance remain for the provider. With this model of telehealth treatment, the provider only learns about client success and failure in treatment adherence through self-reporting during scheduled visits or through toxicology screenings. Utilizing available technologies and incorporating them with treatment plans can reduce the information barrier for providers enabling them to enhance their client recovery care plans and therefore expand care solutions. By employing the available technology, the addiction treatment sector has the opportunity to shift into a client-centered, cooperative care model with increased client monitoring and increased access to care. The next section describes a possible technology solution that removes the geographic barrier, the information barrier and increases the accessibility of guidance and care for individuals wanting addiction recovery.

ONE TECHNOLOGY SOLUTION

By developing an *artificial intelligence (AI) expert system*, any device with a web browser can be used by clients to determine if they have a mild, moderate, or severe SUD. This classification aligns with the Diagnostic and Statistical Manual of Mental Disorders - 5 (DSM-V) classifications. With the assessment complete, the expert system then suggests a customized evidence-based recovery plan for that individual. The recommended recovery plan is a collection of activities that, when completed, will promote abstinence from their drug of choice through motivational enhancement techniques such as contingency management. This software system is called Volition and is being designed for four separate users, who each play a critical role in the addiction recovery process. These four users include the provider or treatment specialist, the SUD client in formal care, the SUD client desiring self-guided recovery, and the Social Support Network (SSN) who are members invested in their recovery. To assist these users as they work through the recovery process, the Volition system has three components: (a) client recovery plan activity management and tracking, (b) a provider dashboard that receives real-time recovery plan updates as reported by the client, and (c) the SSN dashboard that, similar to the provider dashboard, allows the SSN to track the client's recovery

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plan process and incentivize them with digital rewards, for example, Amazon gift cards.

Volition improves the SUD clients' professional treatment engagement and adherence by providing real-time information on the recovery behaviors to the provider while outside formal care. When a client completes activities in the recommended recovery plan, their success is shared in real time to the provider dashboard and SSN network members' dashboard. This type of activity tracking helps validate self-report and enables healthcare professionals to improve their treatment and quality of care. The SUD client is further supported because the SSN members have 24/7 access to their recovery activities and can provide 24/7 support. By establishing an SSN, the SUD client grows their personal recovery community. This type of community can empower the SUD client with a sense of belonging and accountability that ultimately supports positive behavior change. With this reinforcement of positive behavior change comes an overall improvement in quality of life.

With a goal of reducing addiction relapse and saving lives, Volition will be an innovative software system of care that supports individuals seeking recovery, their treatment providers, and their friends and family (SSN). Through continual development of this novel software system, Volition will remove barriers to recovery by giving individuals with SUDs the ability to start, or enhance, their recovery process through expert guidance, digital rewards, and optional accountability from their identified SSN and treatment provider.

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