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Using Telehealth to Harmonize Care for Substance Abuse Disorders

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ABSTRACT

As the nation struggles with a substance abuse and addiction crisis, providers are using telehealth platforms and mHealth tools to enhance care management and coordination. Telehealth and mHealth are giving healthcare providers a well-stocked toolbox to treat people with substance abuse disorders and addiction issues, many of whom require around-the-clock, on-demand support and care coordination to stay on a treatment plan and avoid relapses. With an estimated 115 people dying each day from opioid abuse [1, 2] the issue has become an epidemic, drawing attention from the healthcare industry. To address the crisis, healthcare providers are looking to treatment plans that integrate addiction control with behavioral and psychiatric care and using platforms that not only span populations but can provide personalized care. This is where connected health technology can make the biggest impact. In applying mHealth and telehealth technology to addiction treatment, health care providers are looking to create a digital profile of the patient. While traditional treatment plans have focused on group therapy and care in the doctor's office, connected health platforms enable providers to work with the patient at any time and place, and to see what the patient goes through each day. Here we give the idea, is to give providers insight into what triggers a patient's behaviors, and to create treatment plans that address those triggers and prevent relapses.

INDEX TERMS:

mHealth, Apps, Telemedicine, Wearable Technology, Electronic Health Records (EHR).

APPLYING CONNECTED CARE SOLUTIONS TO A NATIONAL CRISIS

Healthcare providers are finding many different uses for connected care in the substance abuse space. Examples include mHealth apps that give users access to coping skills and care resources, peer support and on-demand access to caregivers in times of crisis. Digital messaging platforms that allow care providers, family members, or peer support group members to deliver timely messages of Support. Mobile health units deployed to urban neighborhoods, rural communities and even high-traffic areas like schools, prisons, and retail centers, that essentially bring the doctor's office to patients with access issues. Telemedicine and telehealth platforms that enable patients to engage in virtual visits with their care provider or a mental health specialist from the comfort and anonymity of their own home. Telemedicine platforms that enable rural providers and those dealing with high-impact populations to collaborate with substance abuse experts and mental health experts on the latest treatments, as well as to talk about difficult cases or chat with peers. mHealth wearables that monitor a user's vital signs and issue alerts – to the user and/or the user's care team – at times of stress Apps and wearables that measure medication adherence in medication-assisted treatment (MAT) programs. mHealth devices (including patches, ingestibles, and wearables) that can deliver timed doses of medication to help users manage pain or stressful situations. Collaboration among multiple providers and organizations that address the public health issues associated with opioid abuse are crucial. The Health Information and Management Systems Society (HIMSS) reported When diagnosing and treating opioid abuse, skilled practitioners

(located remotely) can provide an array of integrated patient services using telehealth technology[3]. Through telehealth, participants can receive needed treatment by accessing expert help without current barriers, receive needed medications, be taught new skills to prevent relapse, and make important connections with others with healthcare system change [4]. Telemedicine for addiction will only become more mainstream in the years to come. So we've only begun to tap into its vast potential to connect millions of underserved people with the help and treatment they need. Addiction is a disease of isolation, after all. Its polar opposite is not sobriety but connection, which is the very thing that telehealth advances can exponentially multiply.

USING SMARTPHONES FOR ADDICTION TREATMENT

By virtue of its ubiquitous presence in today's society, the smartphone [5] is an ideal tool for substance abuse and addiction treatment. It offers a platform for both population health programs and individual treatments.

Since the smartphone rarely leaves the user's side, it has significant value as a real-time communication device. Healthcare providers can push out messages offering support or information via text, SMS or e-mail to large groups at any time. They can also personalize the message for individual users, tying information to one's habits, location or medical record.

For public health groups or community health clinics, a messaging platform can be as simple as a group text or e-mail or as sophisticated as a daily survey that pushes targeted information based on how each question is answered. For example, a clinic might send out a survey each morning asking its patients how they feel, perhaps expressed through a number or emoji. Positive responses are set aside, while negative responses trigger a second message asking for more detail, or a list of resources designed to help someone in crisis. That, in turn, may trigger an alert to the patient's care team to make contact for further treatment. At each level, back-end algorithms sift outpatient responses that don't require follow-up and allow providers to focus on those who do need help. For individual treatment, mHealth apps are emerging as popular tools. Apps could include daily surveys, messaging or chat rooms with peer groups, links to resources, both online and in the community, messaging with one's care provider or a substance abuse specialist, and a 911 link allowing the user to instantly access help. While this platform enables providers to craft population health messages or treat patients individually, it also gives the patient an always there platform to access help discreetly. In many instances, those dealing with substance abuse and addiction issues are hesitant to seek help for fear of the stigma attached to addictions. Such a platform also offers access to large numbers of people with addiction issues, an important factor in substance abuse and addiction research [6].

MAKING TELEHEALTH AN INTEGRAL PART OF TREATMENT

Most substance abuse issues are tied to mental health concerns, and treatment plans often include mental health care. Telehealth can play a pivotal role in connecting patients to the resources they need. Telemental health is one of the fastest growing telemedicine and telehealth specialties. Virtual care platforms offer mental health specialists like psychiatrists, psychologists and behavioral health counselors an avenue for extending care beyond the office or clinic and into communities where access is limited. For those dealing with mental health issues, treatment can be accessed at home, through a laptop or tablet, securely and in privacy. Beyond using telehealth for individual treatment, addiction

specialists can use the platform for group therapy sessions, giving them the opportunity to treat more people in several locations without the need for the provider to travel.

The platform has also proven valuable for educating front-line providers, such as community health workers, primary care physicians, school and prison nurses and those working in federally qualified health centers (FQHCs). In many instances, these providers are Overwhelmed and in need of assistance but don't have the time or money to attend classes. Using the ECHO (Extension for Community Healthcare Outcomes) model [7] developed at the University of New Mexico, academic health systems are set up telemedicine platforms through which they offer biweekly or monthly online training sessions. On this platform, they can bring in addiction specialists and mental health experts to discuss the latest in substance abuse treatment, offer advice on how to deal with these issues, and collaborate on tough cases. Some providers are even taking mobile health treatment right to those most in need. In New York, for instance, a non-profit is deploying mobile health units [8] decked out with telemedicine equipment to provide substance abuse treatment and counseling in communities where resources are thin.

USING MOBILE AND DIGITAL HEALTH DEVICES FOR REMOTE MONITORING AND CARE

Aside from their communication value, smartphones are also being used by healthcare providers for clinical purposes such as remote patient monitoring. Through their own sensors or paired with mobile devices or wearables, they can capture a user's vital signs and other important data and transmit that information back to the care team. Researchers have also been working on diagnostic attachments that can turn the smartphone into a breathalyzer, detecting alcohol or CO intake from a cigarette [9]. In terms of treatment, researchers and health care providers are developing wearables that can deliver timed or sensor-activated doses of anti-stress or anti-craving medication, much like a pump delivers doses of insulin to a patient with diabetes. Much of this research is focused on finding new ways to cope with pain, a key precursor to opioid addiction. The federal government is looking to prompt more research along these lines Among those supporting the use of mHealth devices in addiction treatment is the National Institutes for Health, which kicked off the HEAL (Helping to End Addiction Long-term) Initiative[10] in early 2018 with $1.1 billion in funding and a call to develop novel treatments for opioid abuse and pain management. Science and technology have illuminated our understanding of the mechanisms underlying addiction, With these additional resources, we can develop more customized, high-quality treatments for addiction and pain, as well as harness implementation science to bring evidence-based changes to our health care system, including treatment for those in the criminal justice environment. The FDA also has a keen interest in digital health. The agency launched a 2018 innovation challenge to spur the development of medical devices, including digital health technologies and diagnostic tests that could provide novel solutions to detecting, treating and preventing addiction, addressing diversion and treating pain. Medical devices, including digital health devices like mobile medical apps, have the potential to play a unique and important role in tackling the opioid crisis.

USING TELEHEALTH IN MAT THERAPY

Medication-assisted treatment (MAT) therapy [11] is growing in popularity as a treatment option. MAT combines behavioral health treatment and prescribed medication. In most cases, the medications used are opioids like Methadone, Naltrexone, and Buprenorphine, which require special approval for

prescription and need to be managed carefully. Healthcare providers and substance abuse experts say MAT therapy has proven effective

[12] because it allows them to wean patients off of opioids by administering controlled doses of drugs that counter the opioid's addictive effects. Because of the sheer numbers of people struggling with addictions and the limited number of treatment specialists, providers want to be able to prescribe these medications and monitor multiple patients via telemedicine. In 2008, following the 2001 death of a teenager who had ordered Vicodin through an online pharmacy, Congress passed the Ryan Haight Act [13]. The law prohibits physicians from prescribing controlled substances electronically until they have conducted an in-person examination, or if they meet the federal definition of practicing telemedicine. The definition requires that the patient is treated by, and physically located in, a hospital or clinic which has a valid US Drug Enforcement Agency registration and the telemedicine practitioner is treating the patient in the usual course of professional practice.

While there are exceptions made for telemedicine, the language is murky. Since 2015, telemedicine advocates have lobbied the DEA to create a special registration process for prescriptions of controlled substances through telemedicine without a need for an in-person exam. While the DEA [14] has signaled an interest in agreeing to the caveat, it hasn't yet. Several states have passed laws to help providers prescribe controlled substances through telemedicine. But legal experts warn that federal law supersedes state legislation, so those providers have to be very careful. In Congress, several bills have been filed by lawmakers on both sides of the aisle that would open the door to more telehealth and telemedicine, including e-prescribing, but those bills have yet to move to a vote.

The Ryan Haight Act aside, MAT providers have to be certified by the state Department of Health and Human Services. But state certification classes are often held in urban locations, making it difficult for small and rural providers to attend. That's where ECHO programs can help. In some of the countries like the US, academic health systems are turning to the online platform to develop statewide programs for MAT therapy accreditation and substance abuse training. This allows solo and small practice physicians, public health officials, clinic providers and others in remote locations to get the training they need.

BALANCING CONNECTED CARE WITH IN-PERSON CARE

While mHealth and telehealth will help in addiction treatment, some worry that the technology [16] may further isolate people in need of more hands-on care. Even though someone with an addiction problem can access help at any time on a mobile device, there is still a disconnect that could hinder treatment. Will technology help the addiction or will it exacerbate the isolation? In this connection, mHealth can help improve access, but it can also create a wall between the patient and society. Mindful of that wall and ensures that patients get in-person care, particularly with people they know and trust. With the national substance abuse epidemic showing no signs of slowing down, the healthcare industry,

law enforcement and federal and state government need to work together to create a network of solutions that stress care management and coordination.

A connected health platform that includes telemedicine networks and mHealth tools can help facilitate that treatment, giving front-line doctors and nurses the ability to meet those with addictions where they most need help.

CONCLUSION:

With nearly eight billion mobile subscribers on earth and more than one billion in North America alone, increasing numbers of businesses and service providers are focusing on high-tech mobility. The healthcare industry is tapping into this rapidly expanding phenomenon with such innovations as digitized records, informational "telehealth" apps, and wearable devices that transmit a patient's physical data for medical evaluation. The newly established mHealth – mobile health – platform promises some significant benefits to mobile users, but critics are pointing out several potential problems.Another benefit of mHealth is financial. Analysts suggest that the new mobility could save the health industry and its patients billions annually. The surge in digitized medical records opens the floodgates for potential privacy issues. Although hospitals could save 20 to 30 percent in administrative costs by converting to mobile-ready electronic records, this may expose private information to unauthorized access. Securing this information in a manner that complies with HIPAA standards is an ongoing concern for mHealth application developers. [16]

The outcomes conferred in this report precisely illustrate that the Mobile health apps and devices are really making a strong impact in the healthcare industry, as they may even be able to diagnose disease and prevent the likelihood of developing dangerous medical conditions like heart disease or diabetes. The future is going to be much more significant in terms of the breadth of things that could be measured. It's not just steps – it could be cholesterol, the presence of an infection, your heart rate, or many different tests that could be indicators for the actions within one's body.

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