Pilot Results of a New Model of Addiction Treatment: Managing Addiction as a Chronic Disease

ELLEN LOCKARD EDENS, MD, MPE, CHRISTINE A. DONAHUE, BS, AND CHARLES E. RIORDAN, MD

ABSTRACT — Background: Addiction is increasingly conceptualized as a chronic disease, yet the current addiction treatment system is largely based upon an acute illness model, with weeks of residential care followed by intensive day programs. To address this mismatch between best practices and current standards of care, we initiated a new model of highly intensive, rigorously monitored, year-long outpatient addiction treatment in Connecticut between December 2012 and June 2013.

Methods: We conducted a proof-of-concept pilot study, accepting everyone who was willing to participate and able to pay for the care.

Results: A total of five participants were enrolled during this period, all with DSM-5 substance use disorder (SUD), severe. These participants, who comprised the entire pool of pilot participants and each completed 12 months of treatment, all achieved sustained abstinence (defined as more than six months of continuous sobriety), as confirmed by frequent, random alcohol and drug tests.

Conclusions: These pilot results demonstrate the feasibility and potential effectiveness of an innovative model of addiction treatment.

Introduction

According to the 2012 National Survey of Drug Use and Health (NSDUH), 20.7 million adults and 1.5 million youth aged 12-17 met criteria for DSM-4 substance use disorder (SUD), not including tobacco use disorder, and 2009 cost estimates indicate the U.S. spent $24 billion on SUD treatment. SUD is now conceptualized as a chronic disease, often involving cycles of relapse and remission. Best practices for managing this chronic disease include continuity of care, monitoring during periods of abstinence, early reinervention upon relapse, self-management, and recovery support.

The current system of addiction treatment remains based, however, on an acute illness model of disease management — commonly providing a period of short-term residential rehabilitation, followed by an intensive day program of three to five sessions a week for six to eight weeks, and requiring patients to leave their homes, families, jobs, or schools for weeks at a time to begin care, at a cost to the patient of $10,000 to $35,000 or more. This standard of SUD care has remained largely unchanged for decades and tools long proven to aid in abstinence are seldom fully deployed. Fewer than 25% of rehabilitation programs prescribe any craving-reduction drugs, for instance, despite several studies that have proven that these drugs offer patients significant help in sustaining abstinence. Following treatment, patients typically find themselves in the same communities where they abused alcohol and/or drugs, left largely to their own devices to obtain the on-going support they need to learn to maintain abstinence. As a result, more than half relapse.

We developed a model of addiction treatment that provides highly intensive, rigorously monitored outpatient care for a full year, because research shows that maintaining abstinence for a year dramatically improves a person’s chance of sustained recovery. The model manages addiction as a chronic illness using a multidisciplinary approach, with continuity of care, monitoring during periods of abstinence, early intervention upon relapse, self-management, and recovery support. We found that this model is feasible and potentially effective in improving treatment outcomes.
ciplinary team that is led by an addiction psychiatrist who is also the medical director, includes a registered nurse (RN), and provides day-to-day support over the course of the year from a trained peer in recovery, a certified recovery advisor (CRA), who meets frequently with the client in his or her home. This model provides pharmacotherapy for alcohol and opioid use disorders and robust compliance management through frequent, random alcohol and drug tests and voluntary, continuous GPS monitoring of the client’s location. The model also includes weekly sessions with a licensed therapist, family therapy as indicated, and guided assimilation into 12-step and other recovery support programs, as well as psychosocial education and support.

In short, the model has as its mission to help people learn the new skills and daily habits required to resume their lives in their own communities without using alcohol or drugs. We began conducting a feasibility study upon the acceptance of our first client in December, 2012. Because the majority of people with an SUD also smoke cigarettes, the program began offering a smoking-cessation program in September 2013. Here, we present pilot results on specific health and quality of life outcomes for our first five participants, one of whom opted into the smoking-cessation program. While the number treated is low, their outcomes suggest the feasibility of this model for SUD treatment. We are therefore reporting these preliminary results.

**Methods**

The model delivers high-touch care through a multidisciplinary team that meets with the client over the course of a year in his or her home. This model encourages clients to manage their SUD as a chronic disease — just like diabetes or hypertension — and provides intensive care coordination to prevent acute care episodes.

The first step in each client’s program of care is an evaluation by an addiction psychiatrist assessing any co-occurring disorders and the need for medication-assisted treatment, as indicated. The evaluation includes meeting with the participants’ significant family members to assess the home situation. If a participant requires detox, he/she is referred to an accredited facility. Upon discharge from the facility, the program picks the client up and drives him or her home to begin care.

The program then begins working face-to-face with the client in his or her home, addressing the physical, mental, and emotional health issues required to prevent relapse. On the first day, the RN meets with each client at home for one to two hours to conduct a full nursing assessment, which includes any medications the participant is taking. The RN then works in collaboration with the addiction psychiatrist and the client’s primary care provider (PCP), meeting as needed with the client at his or her home over the course of the year. If the participant does not have a PCP, the program helps the client find one to arrange a full physical examination. If medical specialists are required, such as for care for liver disease, the program helps the client arrange the appointment(s).

The certified recovery advisor is a new role designed to provide daily support and care coordination from a peer in recovery. Each CRA is in sustained recovery and has completed training with the Connecticut Community for Addiction Recovery, and with the program. Each CRA is trained in motivational interviewing (MI) and is familiar with Prochaska’s transtheoretical model of behavior change. An initial goal of the CRA is to build a trust-based relationship with each participant, using MI to foster the client’s intrinsic motivation to change. The CRA meets with the participant for four hours the first and second days, then at least:

- Four times a week for the first two weeks.
- Three times a week in weeks three through eight.
- Twice a week in weeks eight through 23.
- Weekly for the next six months.

The CRA is also available to the client via phone and text at other times as required. The CRA works under the guidance of the medical director and uses the program’s detailed 52-week psychosocial educational curriculum to help the client learn to manage the disease of addiction by mastering new skills and daily habits, including how best to prevent relapse and how to use local 12-step programs to full advantage. The CRA selects 12-step meetings appropriate for each client and accompanies the client to the initial 12-step meetings. The CRA also coordinates random alcohol (EtG urine testing and breathalyzer) and urine drug screening of each client and GPS tracking to monitor and encourage compliance. GPS tracking is implemented via either an app on the client’s cell phone or a tracking device in the client’s car.

Additionally, each client is encouraged to meet weekly with a licensed therapist. If the client already has a therapist, he or she is encouraged to continue working with that provider. If the client does not have a therapist, the program helps the client find one. The CRA actively facilitates these appointments. The program also facilitates family therapy as needed and helps the client access wellness resources, such as aids for meditation, therapeutic massage, and coaching on physical fitness.

The data for this report is presented as five case studies.

**Results**

**Participant 1,** male nonsmoker, had a 10-year history of daily binge drinking and, as a result, had lost his job three years prior. He had completed two 28-day inpatient
stays at local and regional treatment centers in 2011 and 2012, respectively. Each stay was followed by quick or immediate relapse. His wife started divorce proceedings and contacted the program. An addiction psychiatrist evaluated the participant and prescribed disulfiram to be taken in the presence of his wife. The couple reported an immediate reduction of tension in their home. He abstained from alcohol for several weeks, as confirmed by frequent, random alcohol tests, then experienced three brief periods of intoxication. The CRA was meeting frequently with the participant and so was immediately aware of each slip and able to help the participant resume abstinence. The participant consistently attended weekly sessions with a licensed alcohol and drug counselor (LADC) for individual therapy and with a licensed clinical social worker (LCSW) for couples therapy, as confirmed by the therapists. He participated in an average of five Alcoholics Anonymous (AA) meetings each week, as confirmed by GPS tracking. His wife reported participating in one or two Al-Anon meetings each week. At the end of his year of care with the program, Participant 1 had been abstinent for seven months, as confirmed by frequent random urine screens for EtG and by breathalyzer tests, his longest period of sobriety as an adult. He is employed for the first time in three years and has reconciled with his spouse.

**Participant 2**, male smoker, had a 30-year-history of progressively severe alcohol addiction and had been drinking in excess of a fifth of vodka daily for the previous five years. He suffered from elevated liver enzymes and severe neuropathy in his legs and feet and his employment was at risk. He smoked a pack of cigarettes a day. Upon initial evaluation, he was referred for alcohol detoxification at a local hospital, which required six days. During his stay, he was prescribed oral naltrexone. Following discharge, he consistently reported medication adherence to the program's RN and CRA. He attended weekly sessions with an LCSW/LADC, as confirmed by the counselor, and participated in an average of six AA meetings each week, as confirmed by GPS tracking, regularly chairing meetings. After nine months of care by the program, this participant began the program's Smoking Cessation program. At the end of his year of care with the program, this participant had been abstinent from alcohol for the full year, as confirmed by frequent random urine screens for EtG, his longest period of sobriety as an adult, and had been abstinent from tobacco for 11 weeks. His blood tests showed normalization of his liver enzyme levels and his blood pressure returned to normal without medication. The participant also reported significant improvement in the numbness and tingling in his legs and feet and in his overall balance. He proactively scheduled his yearly preventative healthcare, which he had previously neglected, including an annual physical examination. Participant 2 continued working for his employer and achieved his best-ever yearly performance results. His siblings reported significantly better relations with him.

**Participant 3**, male smoker, had a 12-year-history of prescription opioid addiction that began after being prescribed oxycodone for management of knee and back pain. At program admission, he was taking up to 360 mg oxycodone daily, as well as 30 mg of diazepam. He was drinking a fifth of bourbon daily, meeting criteria for alcohol use disorder as well. A smoker, he had been diagnosed with hypertension, depression, and anxiety. He had been charged with Driving Under the Influence several days before starting treatment with the program, resulting in the threat of termination of employment. He was assessed and referred for opioid and alcohol detoxification at a local hospital, which required eight days. To address the participant's opioid use disorder, he was referred to a psychiatrist to prescribe buprenorphine-naloxone. The participant was maintained on 16 mg buprenorphine-naloxone daily and consistently reported medication adherence throughout his involvement with the program, as confirmed by urine testing. He was also prescribed escitalopram for depression and anxiety, lisinopril for hypertension, and trazodone for sleep. He attended weekly sessions with a licensed therapist for four months, then ceased therapy, citing financial concerns. He participated in an average of six AA meetings each week, as confirmed by GPS tracking. At the end of his year of care with the program, Participant 3 had been continuously abstinent from illicit opioids, alcohol, and benzodiazepines, as confirmed by frequent random alcohol and drug tests, including urine screens for EtG and breathalyzer tests, his longest period of sobriety as an adult. He has experienced weight loss of more than 40 pounds and marked improvement in his blood pressure. He has successfully completed his court-mandated DUI classes. He has continued his employment and dramatically improved his work performance, as confirmed by his employer. His family members report significantly better relations with him and he reports an intention to resume therapy in the near-term.

**Participant 4**, female nonsmoker, had a 20-year-history of progressively severe alcohol addiction and for the previous four years had been drinking in excess of a pint of vodka daily. She had been hospitalized twice for jaundice and had been diagnosed with hepatic cirrhosis, but continued to drink. In the two years prior to program admission, she had received no medical care, was unemployed, and had become alienated from her husband. She and her husband were separated but were postponing divorce until they could sell their house,
which was in disrepair and had been on the market for four years. On admission to the program she was assessed and diagnosed with alcohol use disorder, severe, alcoholic liver damage, and dependent personality disorder. She was referred to a gastroenterologist to assess her liver status. In addition to working with the program's RN and CRA, she was referred to a clinical psychologist. The participant consistently attended weekly sessions with the clinical psychologist. She attends an average of 10 to 12 AA meetings each week, as confirmed by GPS tracking, and has taken on leadership roles in AA, including chairing meetings. At the end of her year of care with the program, Participant 4 had been continuously abstinent, as confirmed by frequent random urine screens for EtG. She reported successfully managing renovations to her home in preparation for selling it. She had also applied for employment for the first time in four years. Her adult children report significantly better relations with her.

Participant 5, male smoker, had a 15-year history of heroin addiction for which he had received treatment from more than a dozen residential treatment programs, relapsing following discharge each time. He was referred to the program by his LADC. He was assessed and referred to a PCP who prescribed 24 mg buprenorphine-naloxone daily, which was subsequently reduced to 6 mg. The participant consistently reports adherence to his medication, as monitored and confirmed by the CRA. In the first weeks of care, the CRA had the participant take his medication in front of the CRA on the days they met. On the days when they did not have a meeting scheduled, the CRA required the participant to use his smartphone to video himself taking his medication and send the video to the CRA via text. The CRA has since confirmed medication adherence using urine testing. The participant attends weekly sessions with his LADC, as confirmed by GPS tracking and the therapist, and participates in an average of five AA and/or Narcotics Anonymous (NA) meetings each week, as confirmed by GPS tracking. At the end of his year of care with the program, Participant 5 had been continuously abstinent, as confirmed by frequent random urine screens for EtG and drugs and by breathalyzer tests. A heavy smoker, he has switched from cigarettes to e-cigarettes. His work performance has improved, as confirmed by his employer. Prior to program admission, Participant 5 was facing addiction-related criminal charges. To provide him with support for his hearing on these charges, in his third month of care the program supplied his attorney with the results of his alcohol and drug tests and GPS tracking reports. These records showed that the participant had consistently been abstinent from alcohol and drugs and had regularly attended his job and AA/NA meetings for three months. The court reviewed these records and concluded that his continued participation in the program was an effective alternative to incarceration. He received a significantly reduced sentence of community service.

Conclusions/Future Directions

In the first year of operation, four of the five pilot participants showed continuous abstinence from alcohol and/or illicit drugs since beginning care and all showed continuous abstinence for at least seven months. Three of the five had co-occurring psychiatric illnesses that were identified and addressed. None experienced any sequela of SUDs during the period of participation. For example, none required hospitalization for liver disease, trauma, overdose, suicidality, cognitive problems, or exacerbation of comorbidities. Rather, participants reengaged in their medical care and demonstrated improvements in general health. One stopped smoking. In addition, the fee for this model of highly intensive, rigorously monitored, year-long outpatient addiction treatment is comparable to that for a typical private 28-day residential rehabilitation program.

Despite the low number treated, these pilot results demonstrate the feasibility and potential effectiveness of an innovative model of addiction treatment. Clients admitted subsequent to the pilot study have shown similar results in the first months of care. The program is currently not participating with any health insurers and, therefore, only those with the means to pay were admitted to the initial feasibility study, limiting generalizability. Further study is imperative to determine whether this innovative model employing evidence-based practices in addiction treatment is indeed associated with greater effectiveness. As a next step, the program is exploring multiple funding strategies to increase accessibility to this model of care.

REFERENCES