



CERTIFICATE OF NEED - RESPONSES TO ADAP AND DMH COMMENTS

SILVER PINES

DEVELOPMENT OF A MEDICALLY SUPERVISED WITHDRAWAL TREATMENT CENTER

FOR INDIVIDUALS WITH SUBSTANCE USE DISORDER IN STOWE, VT

Docket No: GMCB-016-19con

March 20, 2020

1. Introduction

In this document, Silver Pines is formally responding to the comments made by the Vermont Division of Alcohol and Drug Abuse Programs (ADAP) and the Vermont Department of Mental Health (DMH) to our application for a Certificate of Need (CON) to open a medically-supervised withdrawal treatment center for individuals with substance use disorder in Stowe, VT (Docket No: GMCB-016-19con).

We appreciate the time and care that both agencies took in reviewing our application.

In the sections below, we first respond to the five comments and concerns expressed ADAP and then address the main concern of DMH.

2. Responses to the concerns expressed by ADAP

2.1 Concern that “this program will result in staff leaving positions in state-certified addiction treatment providers for positions that pay more. Due to the existing workforce shortage, this will likely result in state-certified addiction treatment providers having insufficient staff to provide services.”

According to the most recent data gathered by the Vermont Department of Health in January 2019, there were 424 Licensed Alcohol and Drug Abuse Counselors (LADCs) that were actively providing direct care to patients in Vermont.¹

In its first year, Silver Pines plans to hire three LADCs total and will increase this number to six by Year 3. Out of the active LADCs in Vermont, this represents less than one percent (0.7%) of the total LADCs in Vermont in Year 1 and only 1.4% in Year 3 (assuming the number of LADCs in Vermont remains at the same level it is today).

Additionally, Silver Pines will actively recruit candidates from outside Vermont if need be and provide relocation assistance to hired non-residents.

2.2 Concern that “salaries indicated are significantly higher than the Vermont industry standard, which will negatively impact the workforce of the current treatment system.”

The salaries Silver Pines will offer are designed to be competitive in order to attract and retain the highest-quality staff possible.

¹ Vermont Department of Health. (2019). *Health Care Workforce Census Licensed Alcohol and Drug Abuse Counselors, 2019*. Vermont Department of Health. Retrieved from https://www.healthvermont.gov/sites/default/files/documents/pdf/HS_Stats_LADC19_report.pdf.

Silver Pines will offer nurses \$80,000/yr. This remuneration is in line with the “market” in Vermont. For example, the Blueprint for Health, which distributes funds to support Spoke staffing through its existing Community Health Team payment infrastructure, provides \$85,000/yr for one full-time equivalent (FTE) Registered Nurse Care Coordinator, which is \$5,000 more than the proposed salary to be paid by Silver Pines.²

Silver Pines will offer LADCs \$70,000/yr. While the Blueprint for Health provides \$55,000/yr for one FTE Licensed/Master’s Level Clinician, treatment providers frequently pay their clinicians supplementary funds in addition to the compensation they receive from the Blueprint funding. Further, there is variability in salaries across the state with some organizations paying higher than the median salary. In this context, the proposed remuneration offered by Silver Pines is well within the range of the industry standard in Vermont.

2.3 Concern about “the lack of connection to the rest of the specialty treatment system funded through ADAP and the Department of Vermont Health Access (DVHA). Without this connection, individuals discharging from the new program may have inadequate discharge plans for follow-up services.”

Aftercare planning is a key priority and area of emphasis for Silver Pines. Our entire clinical team, particularly our Aftercare Specialists (whose qualifications and responsibilities are described in the original CON application under Staffing, p. 15), aim to form robust relationships with treatment providers at all levels of care in Vermont and, when appropriate as part of their comprehensive aftercare plans, our patients’ referrals and transitions to these providers will be completed without complication. We believe this is a critical part of recovery for the individual.

Currently, these treatment providers accept referrals from all sources based on availability and stability regardless of the patient’s method of payment, geographic home or the referring treatment providers. Thus, while Silver Pines will not be funded through ADAP or DVHA, the program aims to have strong and sustained connections to other treatment providers within Vermont’s substance use disorder system of care as part of its overall philosophy.

2.4 Concern “about a stand-alone 7 to 10-day detox program because research has shown that less than 90 days of continuous treatment (at any level of care) is not effective, and without strong ties to the treatment system, it is more likely that individuals will not follow-up with continued care. In addition, not all states have access to medication assisted treatment (MAT) for opioid use disorder as Vermont does, thus putting individuals who discharge after 7 to 10 days at risk of overdose due to decreased tolerance and potential lack of availability of MAT in the community to which they return.”

² Department of Vermont Health Access. (2012). Vermont Hub and Spoke Health Homes Program and Payment Overview. Retrieved from <https://dvha.vermont.gov/administration/1hub-spoke-health-home-framework-payment-12-10-12.pdf>.

Research summarized in previous responses to GMCB demonstrates that brief residential treatment produces lasting effects on substance use^{3,4,5} and is similar in efficacy to longer treatment courses.^{6,7} An additional meta-analysis of the literature also found short-term residential treatment to be associated with decreased substance use at 1-year follow-up, with no significant difference between brief programs of less than 2 weeks and those lasting up to 13 weeks.⁸

Recognizing the importance of ongoing medication-assisted treatment for individuals with opioid use disorder, Silver Pines will begin work shortly after admission to connect patients with accessible treatment in their respective communities, with options including more than 113,000 buprenorphine-waivered prescribers and 1,741 Opioid Treatment Programs in the United States, as well as non-waivered prescribers able to provide injectable naltrexone.

Access to office-based treatment has been improving steadily throughout the United States in recent years, such that in 2018 more than 92% of the population lived in a county with at least one waivered buprenorphine prescriber.⁹ For patient that have limited local options, Silver Pines staff will also explore the availability of telemedicine, which can be an effective modality for expanding access,^{10,11} and patients will be provided education on the importance of ongoing treatment and assistance in dealing with transportation and other logistical issues.

2.5 Concern “regarding the neural network treatment planning model and algorithm, the machine learning and neural network models have not been fully tested on the population they will be serving. It appears that they may be using this treatment facility to further study the effectiveness of these treatment modalities.”

Machine learning and neural network models evolve over time. Machine learning uses algorithms to build analytical models, helping computers to “learn” from data. By their definition and structure, the models “learn” from experience and become smarter as the size of

³ Chutupe MA et al. 2001. One-, three-, and six-month outcomes after brief inpatient opioid detoxification. *Am J Drug Alcohol Abuse* 27:19-44.

⁴ Hser Y-I et al. 2007. Predictors of short-term treatment outcomes among California’s Proposition 36 participants. *Evaluation and Program Planning* 30:187-196.

⁵ Stein M et al. 2019. Initiating buprenorphine treatment for opioid use disorder during short-term inpatient ‘detoxification’: a randomized clinical trial. *Addiction* 115:82-94.

⁶ Eastwood B et al. 2018. Effectiveness of inpatient withdrawal and residential rehabilitation interventions for alcohol use disorder: a national observational, cohort study in England. *Journal of Substance Abuse* 88:1-8.

⁷ Foster JH et al. 2000. Outcome after in-patient detoxification for alcohol dependence: a naturalistic comparison of 7 versus 28 day stay. *Alcohol & Alcoholism* 35:580-586.

⁸ Zhang Z et al. 2003. Does retention matter? Treatment duration and improvement in drug use. *Addiction* 98:673-684.

⁹ Andrilla CHA et al. 2019. Geographic distribution of providers with a DEA waiver to prescribe buprenorphine for the treatment of opioid use disorder: a 5-year update. *J Rural Health* 35:108-112.

¹⁰ Weintraub E et al. 2018. Expanding access to buprenorphine treatment in rural areas with the use of telemedicine. *Am J Addict* 27:612-617.

¹¹ Mahmoud H, Vogt E. 2019. Telepsychiatry: an innovative approach to addressing the opioid crisis. *J Beh Health Serv Res* 46:680-685.

the data set increases (e.g., number of patients). The “learning” occurs as new relationships among the variables in the model are recognized; some are strengthened, others weakened.

Neural network models that are used for classification purposes are based on “labeled” or classified datasets. For a neural network to learn the correlations between the “labels” and “data,” human experts must transfer their knowledge by clustering and organizing the data. In our case, we are interested in classifying patients on a series of characteristics that will allow us to individualize their treatment. Our ultimate goal is to achieve better outcomes (e.g., decreased relapse rates, improved engagement in treatment, and ultimately lower total costs related to the illness) by classifying patients and individualizing their treatment. As the model is exposed to increased number of patients and their respective outcome data, it is able to establish more defined correlations between present labels (e.g., type of patient, and type of treatment) and future events (e.g., successful detox).

The typical deputation process in machine learning models is to start using the model in parallel with expert human judgment and observe how much convergence there is between the model and the judgment of the expert. When the model and the expert human judgment concur, the model reinforces the conclusion. When the model and the expert human judgment diverge, an analysis of that divergence takes place to understand why there was a difference. Over time as the model and the expert agree more and more often, and the model is eventually used as a standalone tool. Once machine-learning models have proven to replicate expert opinion, they can be used to insure consistency and quality of treatment.

Initially, Silver Pines will run our proprietary neural-network model to classify patients and match the most appropriate treatment in parallel with our team of physicians, clinicians and nurses. Our multi-disciplinary treatment team will make treatment determinations. We will compare the clinical team determinations with the recommendations of the model. We will follow the process of deputation describe above until we feel the model is replicating our experts opinion. At that time, we will start using the model as a screening tool to augment our clinical team, not to replace it. We see the neural-network model offering an extra layer of patient safety.

As stated on page 8 of the GMCB CON Responses (01/21/20), Professor Cats-Baril has experience in developing neural-network-based decision support tools. He worked with University of Vermont Medical Center (UVMHC) colleagues to develop the Systematic Expert Risk Assessment for Suicide (SERAS) that replicates the critical thinking of expert clinicians in weighing risk factors to assess an individual’s near-term risk of suicide. SERAS is a patient self-administered assessment delivered on a tablet or mobile device and triages patients by level of near-term risk. On average it takes less than 1 minute to self-administer and, 91% of patients rate the use favorably.

SERAS was validated in 550 patients drawn from the UVMHC medical-surgical units and ED. Professor Cats-Baril and his group found that SERAS replicates the assessment of near-term risk of suicide made by Board-certified psychiatrists with an accuracy greater than 90%.¹²

¹² Desjardins I, Cats-Baril W, Maruti S et al. Suicide Risk Assessment in Hospitals: An Expert System-Based Triage Tool. *J Clin Psychiatry*. 2016 Jul;77(7):e874-82.

SERAS has received a number of competitive research awards including the UVMMC, SPARK-VT innovation awards and a NIH SBIR Phase I grant. In 2016, SERAS was awarded third place (out of over 100 applicants) at the national Patient Safety Movement best innovation competition. In recognition for his efforts on SERAS, Professor Cats-Baril was elected to the University of Vermont Inventors Hall of Fame. The use of SERAS as an integral part of Silver Pines' clinical process provides one more dimension of innovation and constitutes another factor differentiating Silver Pines from other clinics.

3. Vermont Department of Mental Health (DMH)

3.1 Concern regarding “the anticipated increase in utilization of local medical and psychiatric emergency department and inpatient services by non-Vermonters, specifically projections that by year three, 25 non-Vermonters will require local EMS and hospital services due to an acute medical or psychiatric conditions, and 8.3 will need inpatient psychiatric care at Vermont facilities. This will result in unexpected burden to not only the local ED, Copley Hospital in Morrisville, but also for Vermont’s inpatient psychiatric system. Even small increases in ED and inpatient psychiatric bed utilization will further overwhelm our system, resulting in longer ED wait times and lower inpatient psychiatric bed availability for Vermonters.”

According to 2018 Vermont Hospitals Report, there were a total of 265,643 visits to Vermont hospital Emergency Departments (EDs) in 2018. Copley Hospital’s ED saw 13,115 total patients in 2018, including VT residents and non-residents.¹³ The estimated 25 non-Vermonters who may require local EMS and hospital services in the course of a year represent 0.1% of Copley Hospital’s total annual ED visits.

Additionally, the University of Vermont Medical Center (UVMMC), which is the closest hospital to Stowe with inpatient psychiatric beds, had 915 inpatient discharges with a high level diagnosis of mental disorders in 2018.¹⁴ The estimated 8.3 non-Vermonters who will need inpatient psychiatric care per year from Silver Pines represent only a fraction (0.9%) of that number.

These small increases notwithstanding, we believe that Silver Pines will ultimately decrease demands on emergency departments and inpatient psychiatric facilities around the state by providing Vermont residents with effective treatment for substance use and co-occurring psychiatric disorders and facilitating linkages to ongoing outpatient care. These positive effects will more than offset the minute increases in utilization due to out-of-state residents requiring EMS and acute hospital care during treatment at Silver Pines. Supporting evidence includes:

¹³ Vermont Department of Health, Green Mountain Care Board. (2020). 2018 Vermont Hospitals Report. Retrieved from <https://www.healthvermont.gov/sites/default/files/documents/pdf/HS-Stats-2018-Vermont-Hospitals-Report.pdf>.

¹⁴ Ibid.

- *Residential treatment reduces the risk of behavioral health admissions.* In a sample of more than 30,000 patients with substance use disorders in 10 states including VT, residential treatment was associated with lower risk of behavioral health admissions in the 90 days following hospital discharge (hazard ratio 0.50, 95% CI 0.33-0.76). In contrast, outpatient and IOP treatment were associated with increased admission rates.¹⁵
- *Ongoing substance use is associated with more frequent and resource-intensive use of emergency departments.* A meta-analysis of 92 studies showed that people who use illicit substances are 4.8 times as likely to present to an emergency department and 7.1 times as likely to be admitted to a hospital.¹⁶ Similarly, records from 297,182 patients visiting an emergency department found that ongoing substance use was associated with an odds ratio of 1.60 (95% CI 1.20-2.13) for persistent frequent ED utilization, after taking into account factors such as socioeconomic status and co-occurring conditions.¹⁷ Finally, use of multiple substances has been associated with longer stays and utilization of more resources during emergency department treatment.¹⁸
- *Brief residential treatment helps patients decrease substance use.* Clinical research demonstrating this is summarized and referenced above under item 4.

Taken together, this evidence shows that substance use is a significant risk factor for increased utilization of emergency departments, inpatient psychiatric services, and health care resources, and that the treatment model offered by Silver Pines can produce meaningful and lasting reductions in this risk factor. We anticipate that the 90 Vermont residents that are projected to be treated annually at Silver Pines by the third year of operation will have an overall decreased demand for use of Vermont emergency departments and inpatient psychiatric facilities related to their substance use disorder.

¹⁵ Reif S et al. 2017. Reducing behavioral health inpatient readmissions for people with substance use disorders: do follow-up services matter? *Psychiatric Services* 68:810-818.

¹⁶ Lewer D et al. 2019. Frequency of health-care utilization by adults who use illicit drugs: a systematic review and meta-analysis. *Addiction* [epub ahead of print] doi: 10.1111/add.14892.

¹⁷ Chiu YM et al. 2020. Persistent frequent emergency department users with chronic conditions: a population-based cohort study. *PLoS One* 15:e0229022.

¹⁸ Klenk L et al. 2019. Resource consumption of multi-substance users in the emergency room: a neglected patient group. *PLoS One* 14:e0223118.