cumberland heights

ARCH ACADEMY

ADOLESCENT RECOVERY OF CUMBERLAND HEIGHTS

Still Waters

the research institute

2020 OUTCOMES REPORT

Cumberland Heights Foundation

Produced by the Research Institute

Summary

The 2020 calendar year presented our organization many challenges. The rapid transition to telehealth for many outpatient providers, significant adjustments in our admissions processes, and the weight of pandemic fatigue on our staff and culture to name a few. Although 2020 remained strenuous, the Research Institute at Cumberland Heights Foundation accomplished several milestones. The following strategic goals were all met by our research staff.

1. ***Maintained our Measurement Based Care system (from admission to discharge)***
2. ***Expanded our ability to monitor and measure patient change beyond discharge (post-discharge data collection)***
3. ***Successfully launched a cloud-based outcomes data repository (shared among six peer organizations)***

Over the last 36 months, our organization has invested significantly in our ability to measure and monitor patient change. In 2018, we launched a simple and valid measurement program aimed at collecting data on patient symptoms as they moved through treatment. In 2019, we expanded that measurement program to include more indices of measurement and leveraged these data internally to assist clinical programs with dynamic monitoring of patient symptomatology. In 2020, we again expanded our measurement program beyond treatment and up to one-year post-discharge. The growth of our measurement program reflects our commitment to monitor and examine how patients respond to treatment and to ensure (as best we can) that patients continue to progress as expected.

Additionally, in late 2019 an opportunity arose to collaboratively construct a cloud-based outcomes repository. Six healthcare organizations (Cumberland Heights, Fellowship Hall, High Watch, Livengrin, Pavillon, and Tully Hill) sought to collect and share de-identified post-discharge outcomes data. The utility of these efforts is high. Rarely have behavioral health providers voluntarily created such a program.

The motivation of our work remains centered on helping those who suffer from Substance Use Disorder (SUD). We believe that our research practices help to improve our treatments, better inform our patients, and help to support our larger field. We could not be more excited to share some of our organizational progress along with preliminary data directly with our patients, staff, and community stakeholders.

Respectfully,

Nick Hayes

Nick Hayes, PhD
Chief Science Officer

About Us

The Research Institute at Cumberland Heights Foundation was founded in 2018 with the expressed mission to support patient change through research. Since that time, our measurement programs have collected over 125,000 unique waves of longitudinal data. We believe that our research and data science processes help support treatment efficacy. By increasing our ability to effectively monitor patient change, our teams are better able to identify how our treatments effect patients who choose Cumberland Heights, increase our insight into process improvements, and help to illuminate which treatments are most appropriate for each unique patient.

RESEARCH AGENDA

The current focus of our research institute lies between the development of our measurement systems, investment in strategic partnerships, and retrospective examination of patient change. We primarily leverage our existing databases in support of quantitative investigations aimed along the following three domains.

1. Investigating the novel application of Measurement Based Care in SUD treatment contexts.
2. Examining the long-term efficacy of Medication Assisted Treatments (e.g. buprenorphine and naltrexone).
3. Exploring cohort differences across treatment modalities and patient populations (e.g. telehealth and COVID-19).

Strategic Goals

- ✓ **Measurement:** the development of cutting-edge dynamic measurement tools and procedures that increase our ability to monitor patient change.
- ✓ **Technology Accelerants:** leveraging the use of smart devices and data science to create systems of support for those recovering from SUD.
- ✓ **Partnerships:** working with scientists, researchers, and technology experts in support of our mission.

JOIN US AND HELP CREATE CHANGE

There are many ways to get involved! Partner with our research staff, apply for an internship, or become a donor. There is more than enough room for everyone to get involved.

Contact our team anytime at: research@cumberlandheights.org

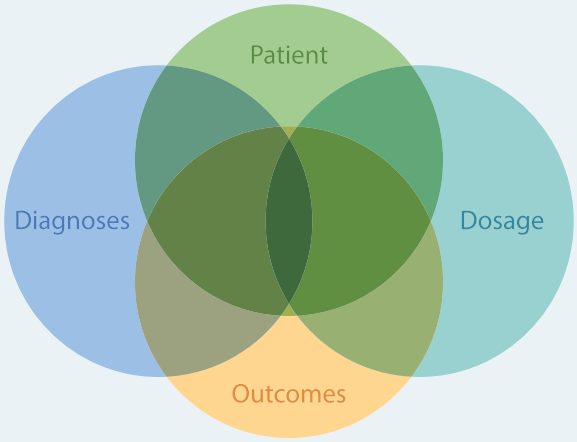
Why do we Measure Change at Cumberland Heights?

The application of measurement processes within treatment science remains fundamentally critical. Measurement provides the bedrock for any practice to determine treatment efficacy. For without measurement, how can we ensure our treatments are effective? The practice of measurement increases our ability to monitor treatment progress, assists in identification of treatment goals, reduces symptom deterioration, and improves overall patient outcomes.[1]

To this end, our healthcare system has adopted the use of Measurement Based Care (MBC). Defined as the practice of leveraging patient data throughout treatment in support of clinical processes.[2] Analogous to measuring the 'blood pressure' of the mind, we believe these practices to be a part of the evidenced based future of efficacious SUD treatment.

What do we measure?

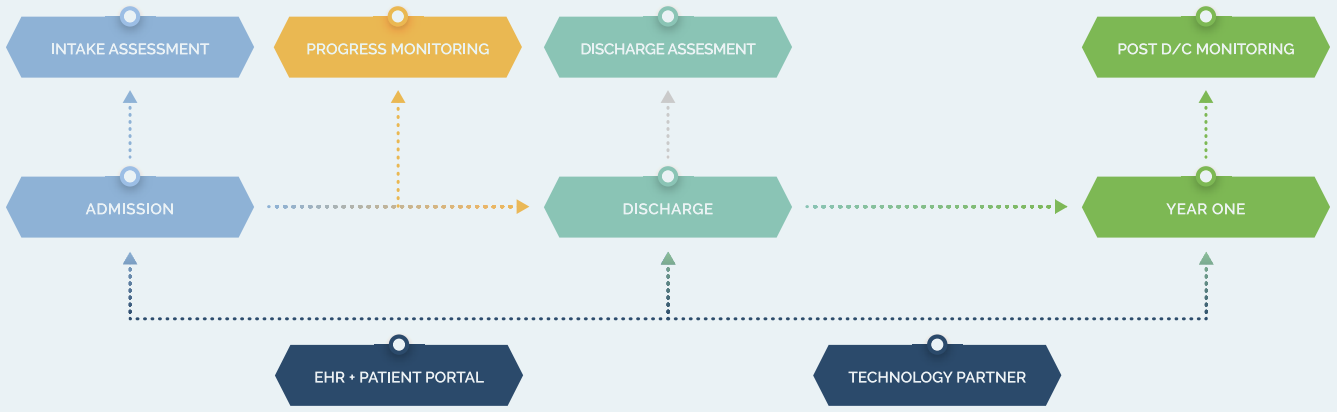
The goals of our MBP system are grounded in both clinical and research utility. By leveraging psychometrically valid tools throughout treatment course and post-discharge acute treatment intervention; our teams are better equipped to maintain efficacious treatment dosage (as evidenced by observed change in patient symptomatology).



The MBP system is organized by the following four domains of data: Patient, Diagnoses, Treatment Dosage, and Outcomes

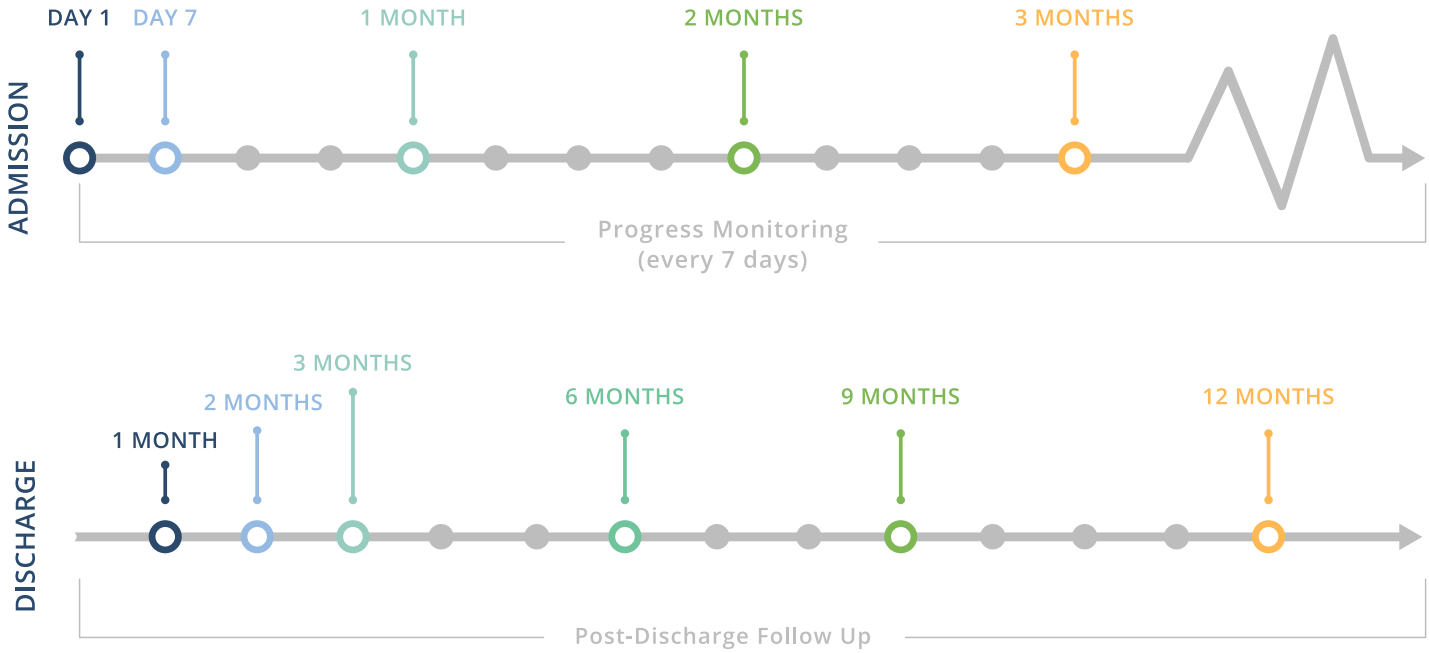
How do we collect data?

First, **Patient** (i.e. demographics, medical/treatment history, etc.), **Diagnoses** (i.e. SUD, Medical, and Behavioral), and **Treatment Dosage** (i.e. number of days in each level of care) are all collected through our Electronic Health Record (EHR) and Patient Portal systems. Lastly, **Outcome Monitoring** data are obtained within treatment by our Patient Portal system and post-discharge by our technology partner via SMS (i.e. standardized assessment).



Visualization of MBP System Data Sources

When do we collect data?



Our Treatments

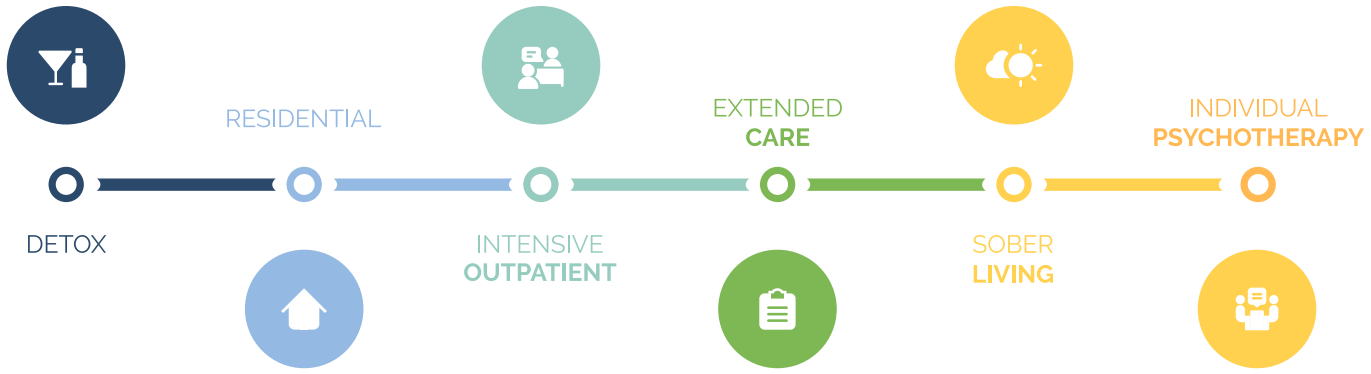
At Cumberland Heights Foundation, our teams strive to provide the best available treatments to our patients and their families. We accomplish that goal through the reliance on Evidence Based Practices (EBPs). Our multidisciplinary treatment teams work synergistically to effectively assess each patient, create robust treatment plans of intervention, and work to produce the resources and skills needed to effectively engage in recovery.

EBPs we use
What are Evidence Based Practices (EBPs)?

- ✓ Motivational Interviewing (MI)
- ✓ 12 Step Facilitation (TSF)
- ✓ Cognitive Behavioral Therapy (CBT)
- ✓ Emotionally Focused Therapy (EFT)
- ✓ Solution Focused Brief Therapy (SFBT)
- ✓ Dialectical Behavior Therapy (DBT)
- ✓ Medication-Assisted Treatment (MAT)

Evidence Based Practices (EBPs) are defined as "The integration of the best available research with clinical expertise in the context of patient characteristics, culture, and preferences." (p. 271) (APA Presidential Task Force on Evidence-Based Practice, 2006)

LEVELS OF PATIENT CARE



Progress Monitoring Outcomes

The Measurement Based Practice (MBC) system at Cumberland Heights was created to monitor and measure patient symptomatology in real-time. These data are designed to be used as part of treatment course through weekly review, intervention, and treatment planning.

KEY FINDINGS

In 2020, (*N* = 2149)) patients were surveyed at regular intervals throughout treatment and for one-year post discharge. Known as Measurement Based Care our system works to support patient change through measuring reported change states and reporting these results back to clinicians.[2] Although our Measurement Based Care system uses several indices of measurement, this report will focus on four of them. More specifically, the Patient Health Questionnaire (PHQ-9) measuring depression severity; the Generalized Anxiety Disorder Scale (GAD-7) measuring symptoms of anxiety, the Brief Assessment for Recovery Capital (BARC-10) measuring positive supports associated with recovery, and the Cumberland Heights Craving Scale (CH-Crave) © measuring craving associated with Substance Use Disorder.

On average, patients spent **32.86 days in our health system** (e.g. Detox, Residential, Outpatient, and Extended Care).

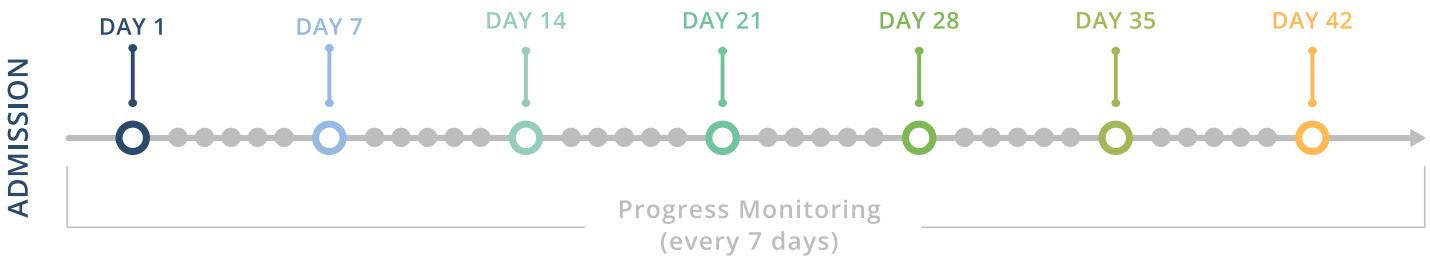
On average, patients reported a **74.4% decrease in depression symptoms.**

On average, patients reported a **67.75% decrease in anxiety symptoms.**

On average, patients reported a **30.8% decrease in craving symptoms.**

On average, patients reported a **13% increase in recovery capital resources.**

*These findings demonstrate how **treatment at Cumberland Heights Foundation positively impacts patient well-being and reported symptomatology.***



Our Patients

Since 1966 Cumberland Heights Foundation has been treating individuals affected by the debilitating effects of Substance Use Disorders (SUDs). Our mission centers on providing the resources and tools needed to navigate recovery away from SUD, helping the individual and family heal from addiction in all forms. The following visualizations demonstrate aggregate representation of the individuals whom received treatment from Cumberland Heights Foundation in 2020.

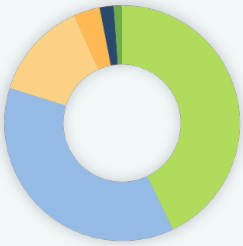
FEMALE DEMOGRAPHIC INFORMATION

SAMPLE *N* = 592

AVERAGE AGE 39.87 Y
AGE RANGE: 17 - 78

MARITAL STATUS

- Single **43.58%**
- Married **36.15%**
- Divorced **13.18%**
- Separated **3.55%**
- Widowed **1.86%**
- Cohabitating **1.18%**
- Other **.51%**



PRIMARY SUD DIAGNOSIS

Alcohol	66.39%
Opioid	18.75%
Cannabis	2.87%
Amphetamine	2.36%
Cocaine	2.36%
Stimulant	2.03%
Sedative	1.52%
Hallucinogen	0.17%
Other	2.87%

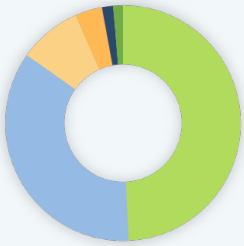
MALE DEMOGRAPHIC INFORMATION

SAMPLE *N* = 1557

AVERAGE AGE 37.65 Y
AGE RANGE: 14 - 80

MARITAL STATUS

- Single **49.26%**
- Married **35.52%**
- Divorced **8.61%**
- Separated **3.73%**
- Cohabitating **1.54%**
- Other **1.34%**



PRIMARY SUD DIAGNOSIS

Alcohol	58.57%
Opioid	19.72%
Cannabis	7.39%
Amphetamine	4.11%
Cocaine	2.89%
Sedative	2.57%
Stimulant	1.28%
Hallucinogen	0.19%
Other	0.32%

Symptom Reduction

DECREASED DEPRESSION SEVERITY

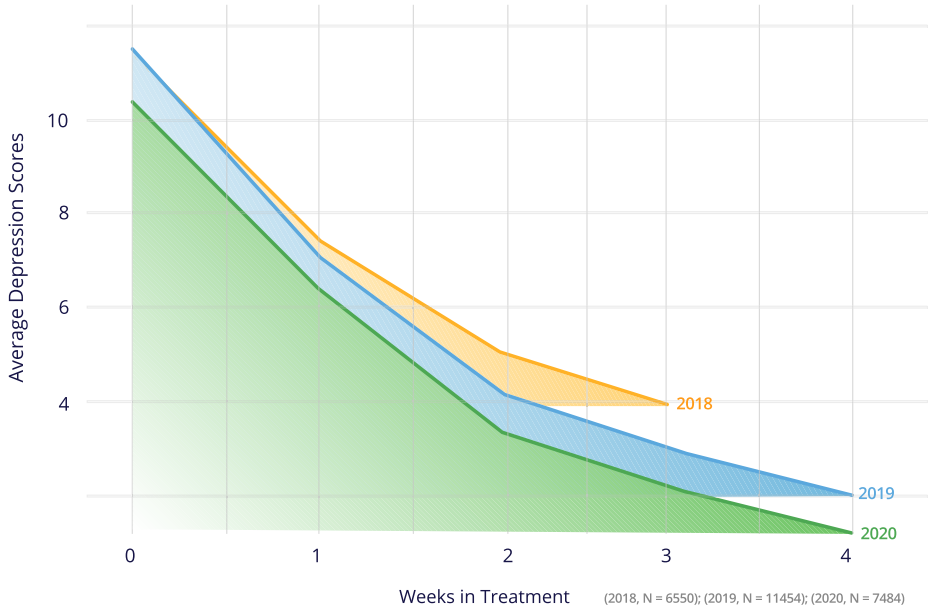
Instrument Description

The Patient Health Questionnaire (PHQ-9) is a standardized assessment used to measure patient levels of depression.[3] The following represents an example of an indicator taken from the PHQ-9: “Little interest or pleasure in doing things”.[4] The PHQ-9 is a continuous variable, with scores ranging from (0 – 27), where higher scores indicate elevated levels of depressive symptoms.

Reduction in Depression Symptoms in Patients (three-year comparison)

The highlighted visualization uses exploratory data analysis techniques to demonstrate observed variance in average patient symptoms, as measured by the PHQ-9. These data highlight the significant positive effect that our treatments have had on patient outcomes throughout engagement in our clinical programs.

REDUCTION IN DEPRESSION SYMPTOMS IN PATIENTS



74.4%

Decrease in Depression Symptoms that contribute to Substance Use Disorder

DECREASED ANXIETY SYMPTOMS

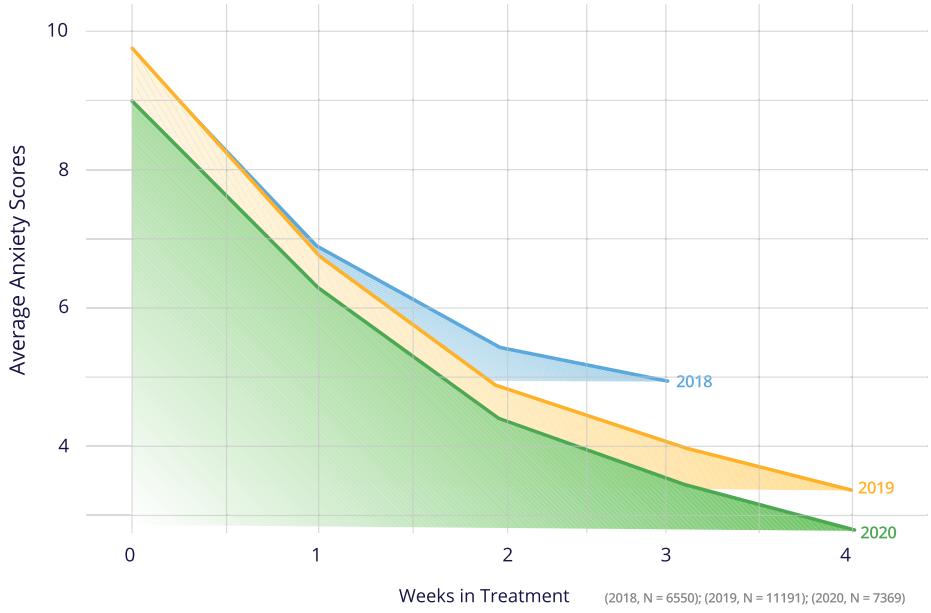
Instrument Description.

The Generalized Anxiety Disorder Scale (GAD-7) is a standardized assessment used to measure patient levels of anxiety.[5] The following represents an example of an indicator taken form the GAD-7: "Feeling nervous, anxious or on edge".[6] The GAD-7 is a continuous variable, with scores ranging from (0 – 21), where higher scores indicate elevated levels of anxiety symptoms.

Reduction in Anxiety Symptoms in Patients (three-year comparison)

The highlighted visualization uses exploratory data analysis techniques to demonstrate observed variance in average patient symptoms, as measured by the GAD-7. These data highlight the significant positive effect that our treatments have had on patient outcomes throughout engagement in our clinical programs.

REDUCTION IN ANXIETY SYMPTOMS IN PATIENTS



67.75%

Decrease in Anxiety Symptoms that Contribute to Substance Use Disorder

DECREASED CRAVING SEVERITY

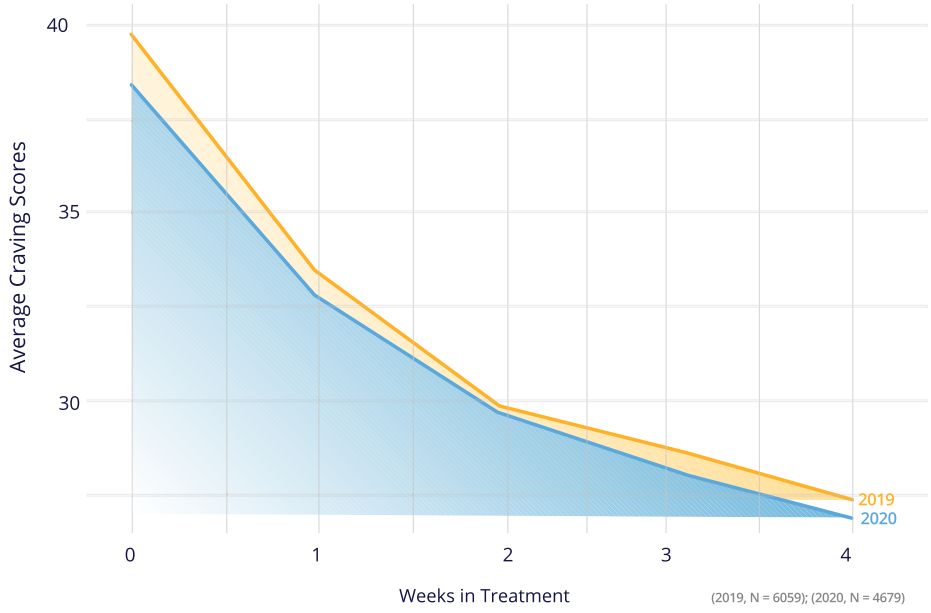
Instrument Description

The Heroin Craving Questionnaire-Short Form (HCQ-SF-14) is a standardized assessment used to measure patient levels of craving.[7] The measure was adapted for use in measurement of craving across all substance categories. The following represents an example of an indicator taken from the HCQ-SF-14: "I would be less irritable now if I could use alcohol/drugs". The HCQ-SF-14 is a continuous variable, with scores ranging from (0 – 49), where higher scores indicate elevated levels of craving symptoms.

Reduction in Craving Symptoms in Patients (two-year comparison)

The highlighted visualization uses exploratory data analysis techniques to demonstrate observed variance in average patient symptoms, as measured by the HCQ-SF-14. These data highlight the significant positive effect that our treatments have had on patient outcomes throughout engagement in our clinical programs.

DECREASE IN CRAVINGS IN PATIENTS



30.8%

Decrease in craving symptoms that can contribute to Substance Use Disorder

INCREASED RECOVERY CAPITAL RESOURCES

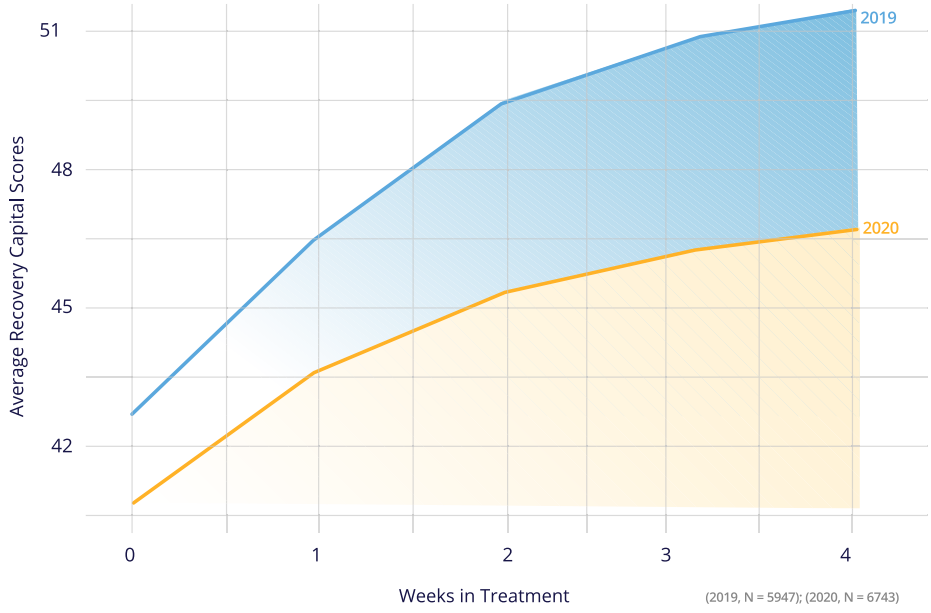
Instrument Description

The Brief Assessment of Recovery Capital (BARC-10) is a standardized assessment used to measure patient levels of recovery capital.[8] The concept of Recovery Capital is defined as "...the quantity and quality of internal and external resources that can be brought to bear to initiate and sustain recovery from SUD". The BARC-10 increases our ability to measure patient success as the measure is associated with "recovery progress that extends beyond mere abstinence". The BARC-10 is a continuous variable, with scores ranging from (10 – 60), where higher scores indicate higher levels of Recovery Capital resources.

Increase in Recovery Capital Resources in Patients (two-year comparison)

The highlighted visualization uses exploratory data analysis techniques to demonstrate the observed changes in average patient change, as measured by the BARC-10. These data highlight the significant positive effect that our treatments have had on patient outcomes throughout engagement in our clinical programs.

INCREASE IN RECOVERY CAPITAL RESOURCES



13%

Increase in recovery capital resources that can support sustained recovery

Post-Discharge Outcomes

In 2017, to further support patients post-discharge our health system invested in our Recovery Care Advocates (RCA) program. The RCA program consists of Peer Recovery Support Specialists (PRSSs) who are trained to provide support for individuals who are early in recovery from their Substance Use Disorder. Our RCAs assist our patients with peer support, identification of positive recovery supports, and accountability away from maladaptive behaviors associated with addiction.

In 2020, our research and technology teams launched our post-discharge outcomes program. The goal of this was simple—to synchronously monitor and measure patient change post-discharge. We accomplished this goal using technology accelerants designed to collect valid data. The data collected from patients after treatment are associated with historical predictors of recovery success (e.g. meeting attendance, job maintenance, and community engagement).

Highlighted below is **a visual representation of how our RCA and Outcomes Program are integrated as synergistically supporting the other.** The data presented below represent a first look into these outcomes and serve as preliminary evidence for longitudinal treatment outcome.

Heart = Outcomes Program collection
Phone = RCA Contact Point

Outcome Measures

Our RCA and Outcomes Programs use several indices of measurement. The following are of focus in this annual report. Standardized Assessments: Depression (The Patient Health Questionnaire, PHQ-9)[3], Anxiety (Generalized Anxiety Disorder Scale (GAD-7)[5], Craving (The Cumberland Heights Craving Scale, CH-Crave ©, and Recovery Capital (The Brief Assessment of Recovery Capital (BARC-10)[8]). Additional Measures: Meeting Attendance, Use Days, Emergency Room Visits, Interactions with Law Enforcement, and Employment Status.

POST DISCHARGE SAMPLE

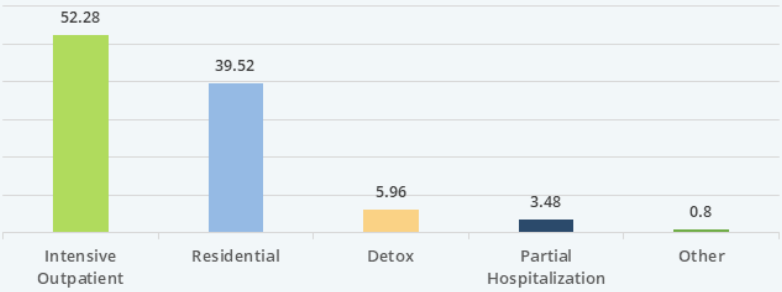
Approximately, (*N = 1293*) patients were enrolled into our post-discharge outcomes program between (01/01/20 – 12/31/20).

MALE = 70.84%

FEMALE = 29.08%

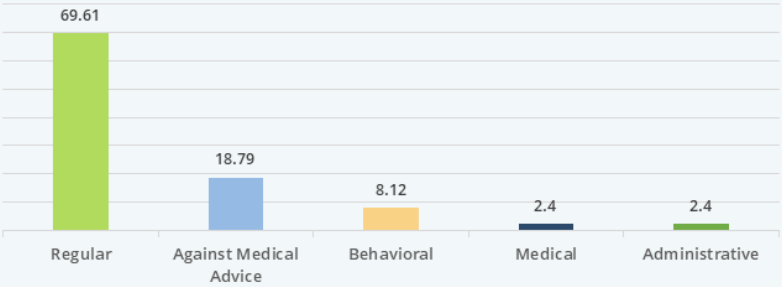
LAST LEVEL OF CARE

- Intensive Outpatient = 52.28%
- Residential = 39.52%
- Detox = 5.96%
- Partial Hospitalization = 3.48%
- Other = .08%



DISCHARGE TYPE

- Regular = 69.61%
- Against Medical Advice = 18.79%
- Behavioral = 8.12%
- Medical = 2.4%
- Administrative =2.4%



PRIMARY SUD DIAGNOSTICS

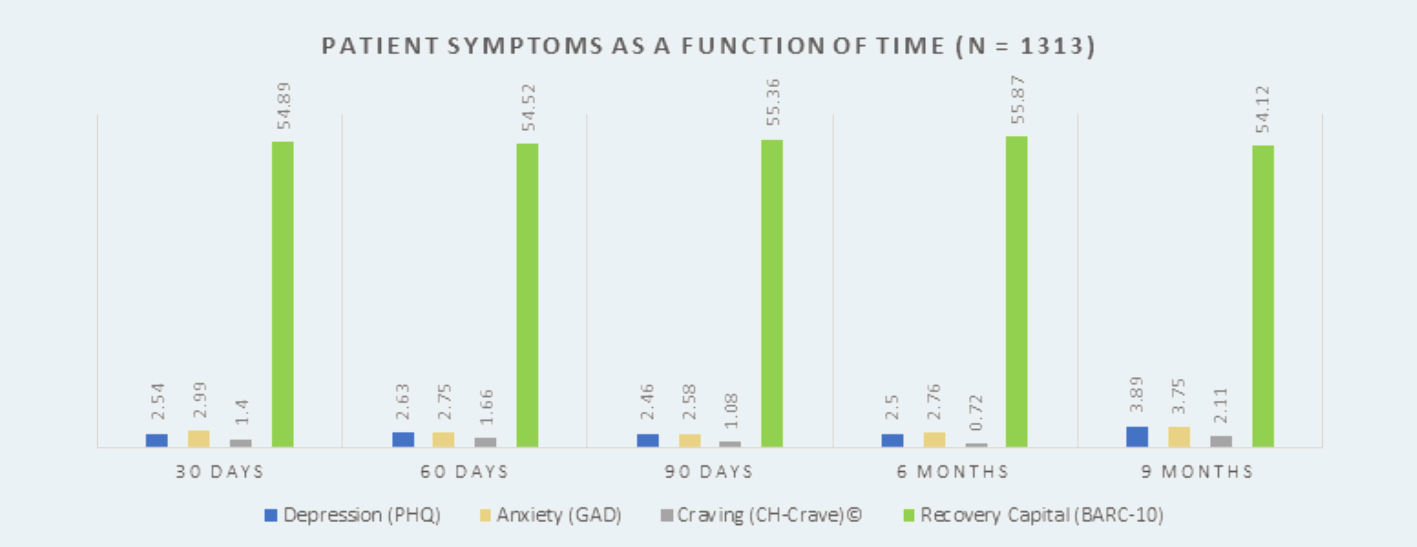
Alcohol	65.2%
Opioid	22.67%
Stimulant	7.04%
Cannabis	2.94%
Sedative	2.56%
Other	0.7%
Hallucinogen	0.23%
Inhalant	0.15%

Post Discharge Results

The mission of our organization is to "Transform lives, giving hope and healing to those affected by Substance Use Disorders (SUD)". We accomplish our mission through community support, a multidisciplinary team, and evidence-based practices. We also believe (as providers) that we have an increased responsability in providing our patients, their families, and our staff with the information needed to support recovery. The findings identified below represent aggregate observed outcome for our patients across the 2020 calendar year.

- ✓ Over the last year, our data indicate that patient **symptoms remained significantly reduced** post-discharge.
- ✓ Increased **Meeting Attendance** is associated with decreased **Using Days**.
- ✓ **Successful Program Completion** is associated with increased **Meeting Attendance**, decreased **ER Visits**, and decreased **Incidents with Law Enforcement**.
- ✓ Increased **Length of Stay** in treatment was associated with increased **Meeting Attendance**.

The below visualizations demonstrate the observed longitudinal effect Cumberland Heights treatments have on patient outcomes post-discharge. Although preliminary, these data suggest that symptoms remain significantly reduced as patients transition back into day-to-day life.



First in Tennessee

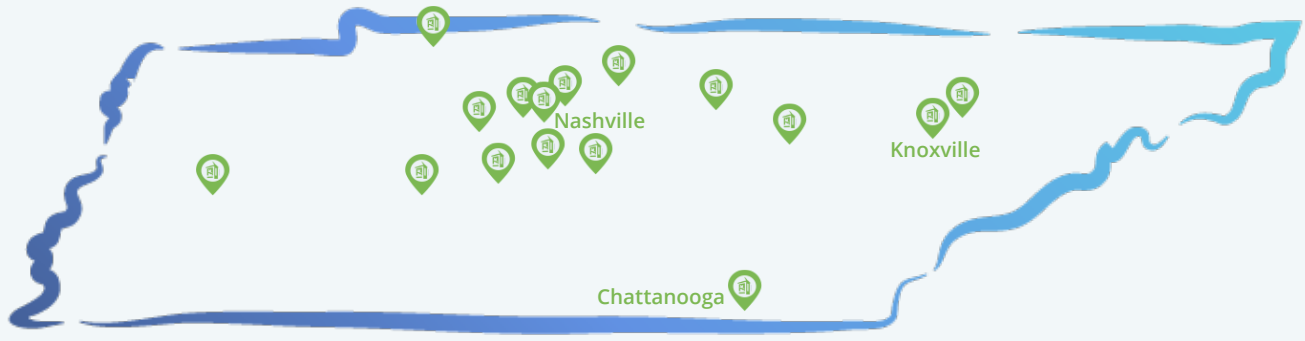
As part of our ongoing commitment to quality patient care, Cumberland Heights Foundation sought and received the American Society of Addiction Medicine's (ASAM) certification for Levels 3.7 (Medically Monitored Inpatient Services) and 3.5 (Clinically Managed Residential Services) (the first provider in Tennessee).

ASAM American Society of Addiction Medicine

Cumberland Heights at a Glance

MISSION
To transform lives, giving hope and healing to those affected by alcohol or drug addiction.

LOCATIONS
Nineteen (**19**) locations throughout Tennessee



EMPLOYEES
350 Employees

PATIENTS
On average, treating **2,500** patients every year

TELEHEALTH
Intensive Outpatient and Individual Psychotherapy

TREATMENTS
Residential, Intensive Outpatient, Extended Care, Sober Living, Family Care and more.

References

[1] Lambert, M. J., Harmon, C., Slade, K., Whipple, J. L., & Hawkins, E. J. (2005). Providing feedback to psychotherapists on their patients' progress: Clinical results and practice suggestions. Journal of clinical psychology, 61(2), 165-174.

[2] Scott, K., & Lewis, C. C. (2015). Using measurement-based care to enhance any treatment. Cognitive and behavioral practice, 22(1), 49-59.

[3] Löwe, B., Kroenke, K., Herzog, W., & Gräfe, K. (2004). Measuring depression outcome with a brief self-report instrument: sensitivity to change of the Patient Health Questionnaire (PHQ-9). Journal of affective disorders, 81(1), 61-66.

[4] Spitzer, R. L., Kroenke, K., Williams, J. B., & Patient Health Questionnaire Primary Care Study Group. (1999). Validation and utility of a self-report version of PRIME-MD: the PHQ primary care study. Jama, 282(18), 1737-1744.

[5] Spitzer, R. L., Kroenke, K., Williams, J. B., & Löwe, B. (2006). A brief measure for assessing generalized anxiety disorder: the GAD-7. Archives of internal medicine, 166(10), 1092-1097.

[6] Löwe, B., Decker, O., Müller, S., Brähler, E., Schellberg, D., Herzog, W., & Herzberg, P. Y. (2008). Validation and standardization of the Generalized Anxiety Disorder Screener (GAD-7) in the general population. Medical care, 46(3), 266-274.

[7] Heinz, A. J., Epstein, D. H., Schroeder, J. R., Singleton, E. G., Heishman, S. J., & Preston, K. L. (2006). Heroin and cocaine craving and use during treatment: measurement validation and potential relationships. Journal of substance abuse treatment, 31(4), 355-364.

[8] Vilsaint, C. L., Kelly, J. F., Bergman, B. G., Groshkova, T., Best, D., & White, W. (2017). Development and validation of a Brief Assessment of Recovery Capital (BARC-10) for alcohol and drug use disorder. Drug and Alcohol Dependence, 177, 71-76.

the
research
institute