cumberland heights | Still Waters | ARCH Academy | Adolescent Recovery of Cumberland Heights | Research Institute Cumberland Heights

2022
OUTCOMES REPORT

Cumberland Heights Foundation
Produced by the Research Institute

CONTENTS

SUMMARY

The Research Institute at Cumberland Heights Foundation is proud to present our 5th Annual Outcomes Report. The following report represents both our commitment to monitoring treatment efficacy and disseminating those observations directly to the public. Our primary goal in distributing these data lies centrally in our belief that those searching for treatment should have access to clear information that accurately highlights treatment outcome. We believe the following information reflects that commitment by transparently disclosing our measurement processes and observations year over year.

As an update, our Research Institute also experienced significant growth across the 2022 calendar year. We are excited to share our progress and highlight how our programs positively impact patient's lives. The following milestones were all achieved in 2022:

- ✔ Maintained our Measurement Based Care and Post Discharge data collection systems, surpassing (n = 600,000) unique waves of patient data.
- ✔ Expanded the SUD Outcomes Network membership and surpassed (n = 12,000) unique episodes of care into the system.
- ✔ Created a formal partnership with NAATP's Clinical Outcomes Data Repository (i.e., analytics partner).

The growth of our Measurement Based Care 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. To date, we have discovered the following:

Longitudinal Symptom Reduction

Patient observed symptomatology maintained statistically significant reductions through the first year post-discharge treatment services.

Decreased Readmission

Increased treatment dosage was associated with better post-discharge outcomes (i.e., lower use days, higher recovery participation, and lower readmission rates).

Increased Abstinence

Patients who successfully completed our programs were more likely to report successful post-discharge outcomes.

Over the last 5 years, Cumberland Heights 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 extended our measurement program beyond treatment and up to one-year post-discharge. In 2021, we assisted in the development of the largest de-identified SUD dataset ever created. Over the coming years, that dataset will serve our field in supporting the research questions we haven't identified yet. In 2022, we grew our team with the addition of Antoinette Giedzinska, PhD as the Director of the Research Institute.

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 helps 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

Antoinette Giedzinska

Antoinette Giedzinska, PhD, Director of the Research Institute

ABOUT US

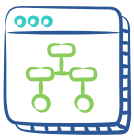
The Research Institute at Cumberland Heights Foundation was founded in 2018 with the expressed mission to support patient change through research. Since that time, our measurement programs have collected over 600,000 unique waves of longitudinal data. We believe that our research and data science processes help support treatment outcomes. 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.

Investigating the novel application of Measurement Based Care in SUD treatment contexts.

Examining the long-term efficacy of Medication Assisted Treatments (e.g., buprenorphine and naltrexone).



Exploring the observed relationship between Treatment Dosage and Post-Discharge Outcomes.

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?

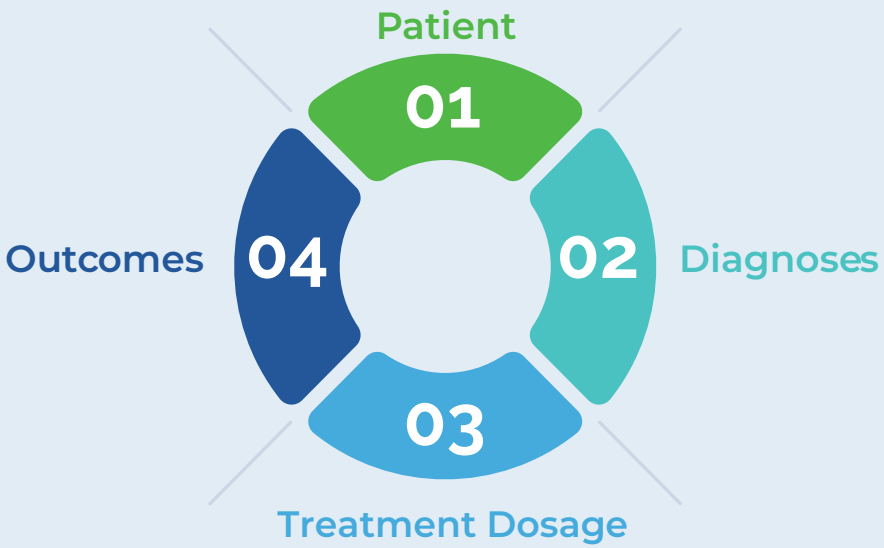
The application of measurement processes within treatment science remains fundamentally critical. Measurement provides the bedrock for any practice to determine treatment effectiveness. For without measurement, how can we ensure our treatments are effective? The practice of measurement increases our 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 'blood pressure', we believe these practices to be a part of the evidenced based future of SUD treatment.

What do we measure?

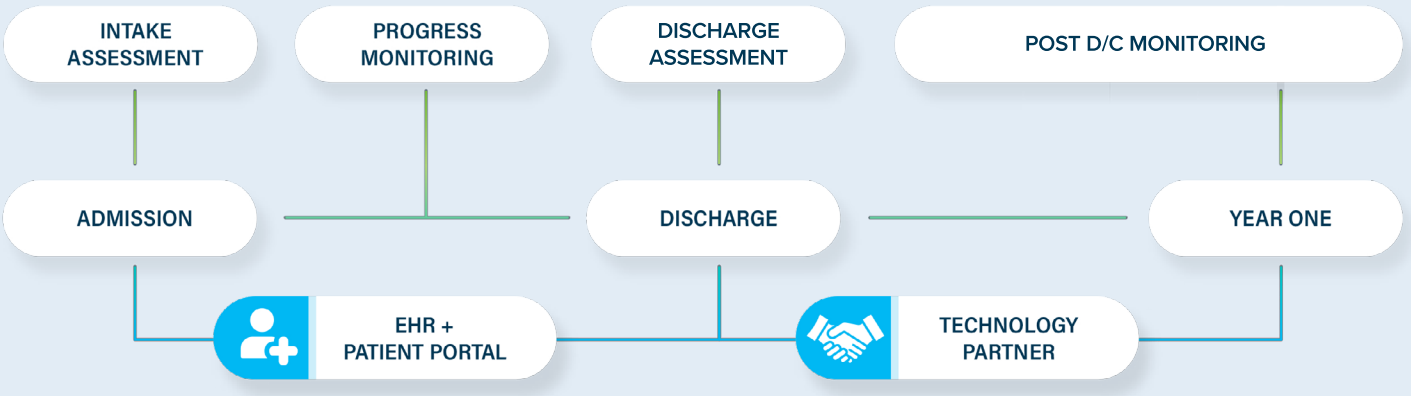
The goals of our MBC system are grounded in both clinical and research utility. By leveraging psychometrically valid tools throughout treatment course and post-discharge acute treatment intervention; our teams are better equipped to maintain appropriate treatment dosage (as evidenced by observed change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

Our Measurement Based Care system is organized by the following four domains of data:

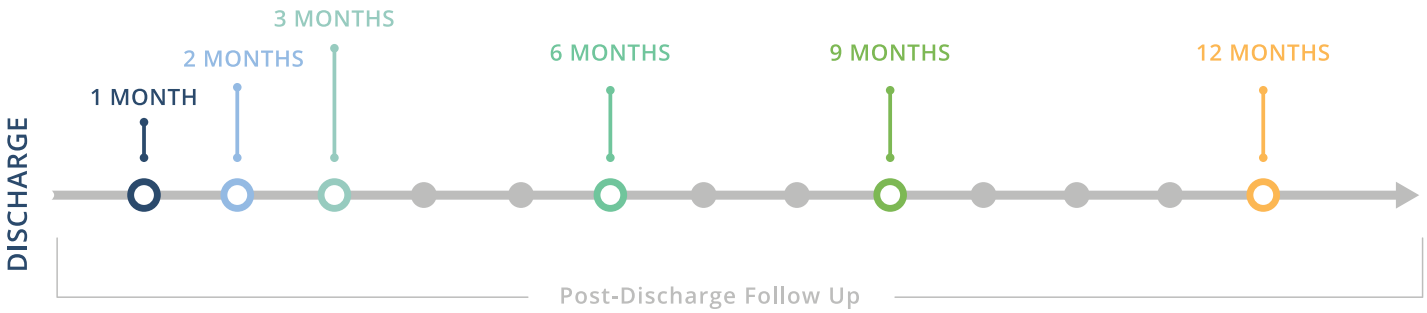


HOW DO WE COLLECT DATA?

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).



WHEN DO WE COLLECT DATA?



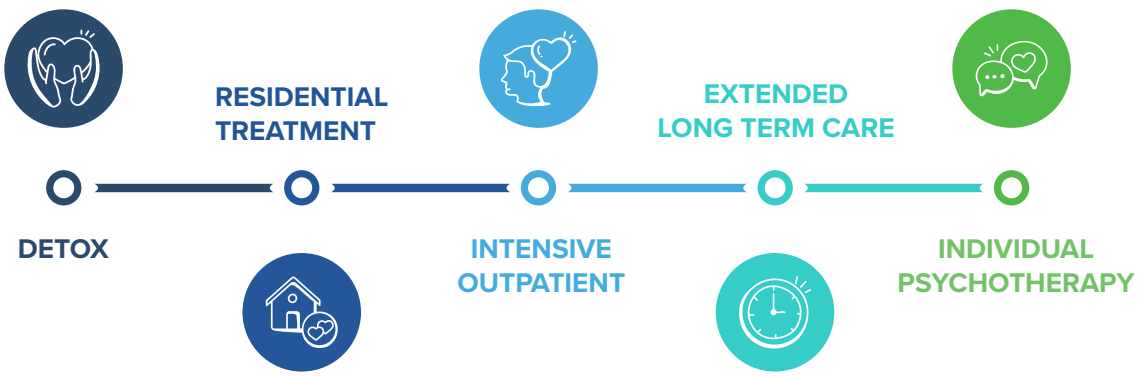
OUR TREATMENTS

At Cumberland Heights Foundation, our teams strive to provide the best treatments to our patients and their families. We accomplish that goal through the application of Evidence Based Practices (EBPs). Our multidisciplinary treatment teams work synergistically to effectively assess each patient, create robust treatment plans of intervention, and help to support the development of the 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)**

Levels of Patient Care



OUR PATIENTS

Female Demographic Information

Sample (n = 605)
Average Length of Stay: 33.36 Days

Average Age 42 Years
Age Range 17-84

Female Marital Status

- Single: 36%
- Married: 45%
- Divorced: 12%
- Separated: 3%
- Widowed: 2%
- Cohabitating: 2%
- Other: <1%

Female Primary SUD Diagnosis

- Alcohol: 71%
- Opioid: 16%
- Stimulant: 8%
- Cannabis: 2%
- Sedative-Hypnotic Anxiolytic: 2%
- Inhalant: <1%
- Other: <1%

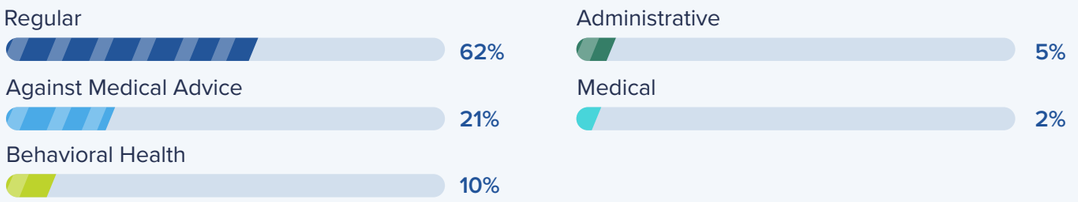
Female Co-Occurring Diagnosis

- 38% Depressive Disorder
- 14% Anxiety Disorder
- 11% Trauma Disorder

Female Treatment Journey

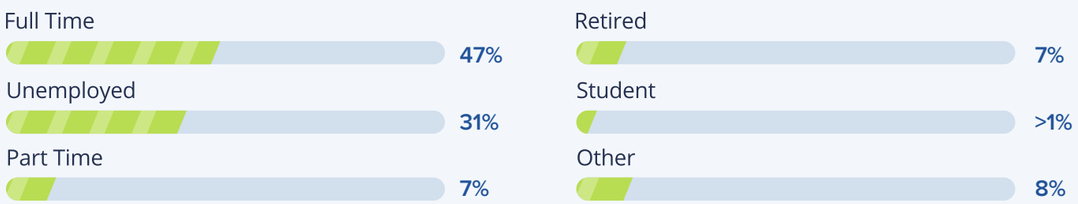
- 50% Residential
- 31% IOP
- 19% Residential + IOP

Female Discharge Type



- Regular 62%
- Against Medical Advice 21%
- Behavioral Health 10%
- Administrative 5%
- Medical 2%

Female Employment Status



- Full Time 47%
- Unemployed 31%
- Part Time 7%
- Retired 7%
- Student >1%
- Other 8%

Male Demographic Information

Sample (n = 1537)
Average Length of Stay: 37.84 Days

Average Age 38 Years
Age Range 14-80

Male Marital Status

- Single: 52%
- Married: 34%
- Divorced: 11%
- Separated: 2%
- Widowed: >1%
- Cohabitating: 1%
- Other: <1%

Male Primary SUD Diagnosis

- Alcohol: 61%
- Opioid: 16%
- Stimulant: 11%
- Cannabis: 8%
- Sedative-Hypnotic-Anxiolytic: 2%
- Inhalant: <1%
- Other: <1%

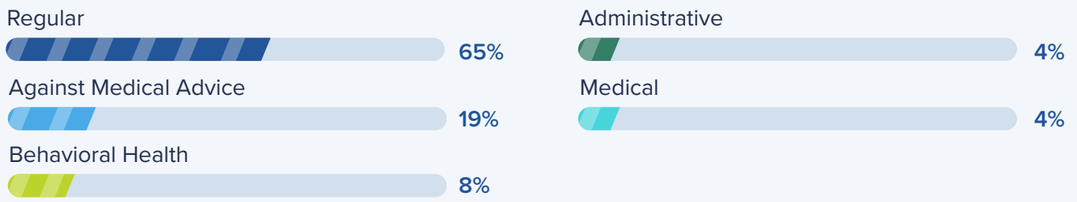
Male Co-Occurring Diagnosis

- 31% Depressive Disorder
- 11% Anxiety Disorder
- 7% Trauma Disorder

Male Treatment Journey

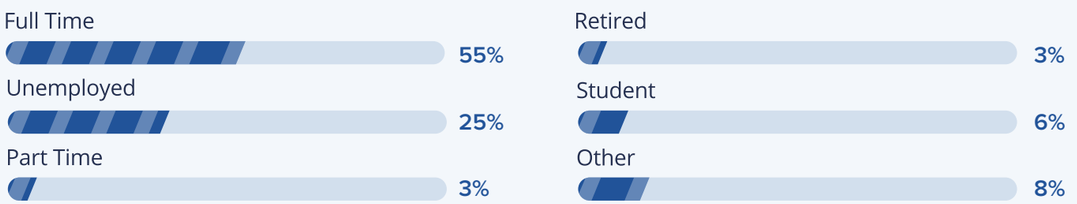
- 58% Residential
- 22% IOP
- 20% Residential + IOP

Male Discharge Type



- Regular 65%
- Against Medical Advice 19%
- Behavioral Health 8%
- Administrative 4%
- Medical 4%

Employment Status



- Full Time 55%
- Unemployed 25%
- Part Time 3%
- Retired 3%
- Student 6%
- Other 8%

PROGRESS MONITORING (TREATMENT OUTCOMES)

In 2022, (n = 2,142) 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 delivering these results back to clinicians and patients[2]. Although our Measurement Based Care system uses several indices of measurement, this report will focus on four of them. 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 Craving Scale measuring craving associated with Substance Use Disorder.

On average, patients reported a **59% decrease in depression symptoms.**

On average, patients reported a **57% decrease in anxiety symptoms.**

On average, patients spent **37.06 days in our health system** (e.g., Detox, Residential, Extended Care, and Intensive Outpatient).

On average, patients reported a **60% decrease in craving symptoms.**

On average, patients reported a **11% increase in recovery capital resources.**

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

SYMPTOM REDUCTION

DECREASED DEPRESSION SEVERITY

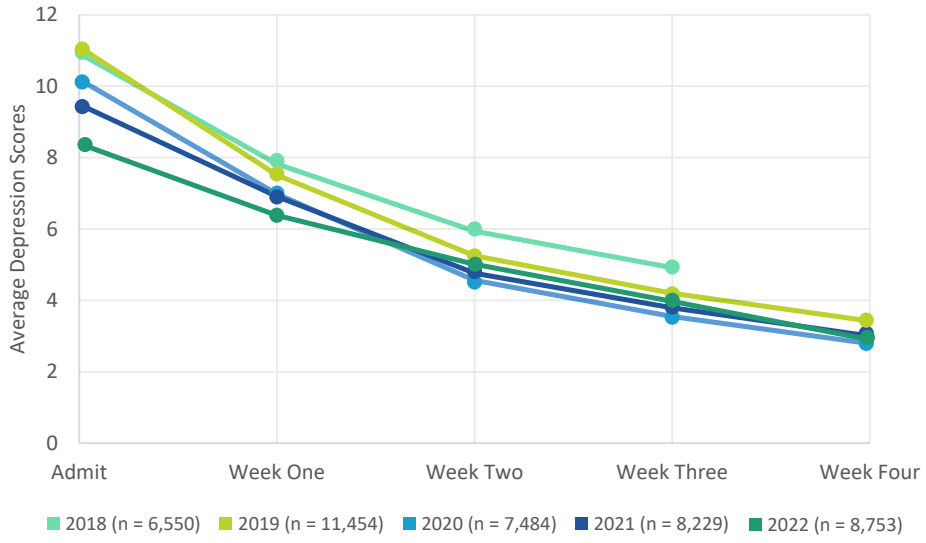
Instrument Description

The Patient Health Questionnaire (PHQ-9) is a standardized assessment used to measure patient levels of depression.[4] The following represents an example of an indicator taken from the PHQ-9: “Little interest or pleasure in doing things”.[5] 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 (four-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.

OBSERVED REDUCTION IN DEPRESSION SYMPTOMS



67%

Decrease in Depression Symptoms that contribute to Substance Use Disorder (2018-2022)

SYMPTOM REDUCTION

DECREASED ANXIETY SYMPTOMS

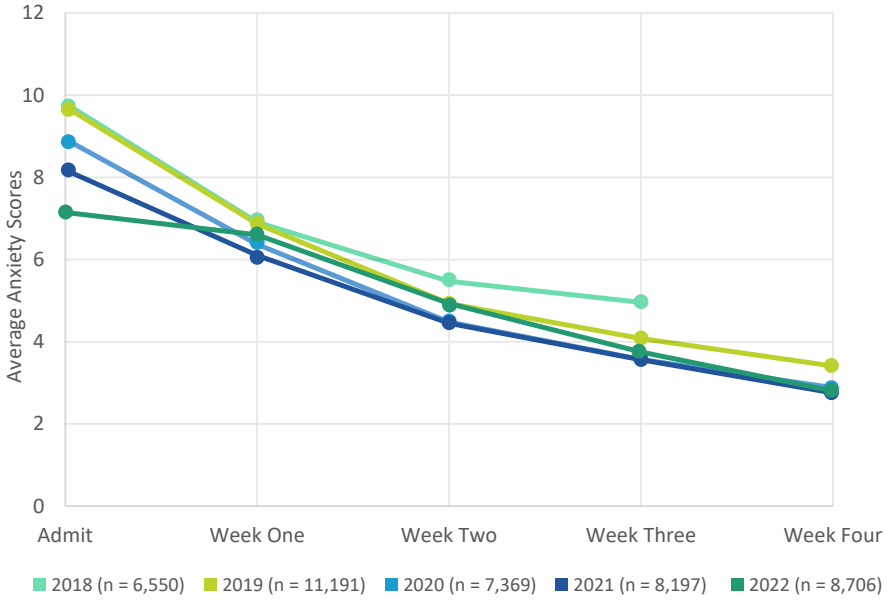
Instrument Description

The Generalized Anxiety Disorder Scale (GAD-7) is a standardized assessment used to measure patient levels of anxiety.[6] The following represents an example of an indicator taken form the GAD-7: "Feeling nervous, anxious or on edge".[7] 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 (four-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.

OBSERVED REDUCTION IN ANXIETY SYMPTOMS



63%

Decrease in Anxiety Symptoms that contribute to Substance Use Disorder (2018-2022)

SYMPTOM REDUCTION

DECREASED CRAVING SEVERITY

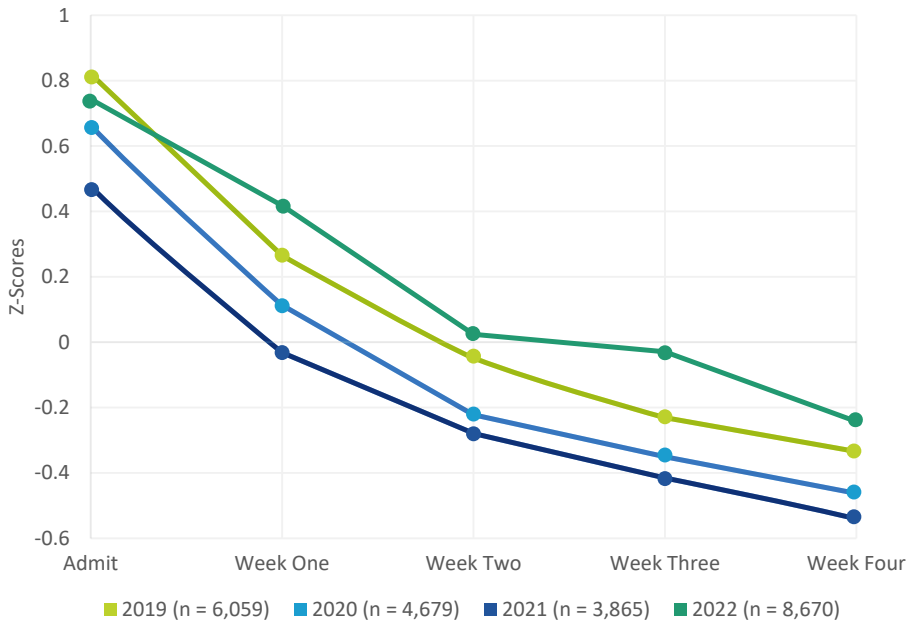
Instrument Description

The Craving Scale is a standardized assessment used to measure craving associated with Substance Use Disorders[8]. The following represents an example of an indicator taken from the Craving Scale: “Please rate how strong your desire was to use in the past 24 hours.”. Each item on the Craving Scale is rated on a scale from (0-9), and the total score is calculated as the average of the three items. Higher scores indicate elevated levels of craving symptoms.

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

The highlighted visualization uses exploratory data analysis techniques to demonstrate observed variance in z-scores representing changes in patient symptoms, as measured by the Craving Scale in (2021-2022)[8] and the Heroin Craving Questionnaire-Short Form (HCQ-SF-14) between (2019-2020).[9] These data highlight the significant positive effect that our treatments have had on patient outcomes throughout engagement in our clinical programs.have had on patient outcomes throughout engagement in our clinical programs.

OBSERVED REDUCTION IN CRAVING SYMPTOMS



88%

Decrease in Craving Symptoms that contribute to Substance Use Disorder (2018-2022)

SYMPTOM REDUCTION

INCREASED RECOVERY CAPITAL RESOURCES

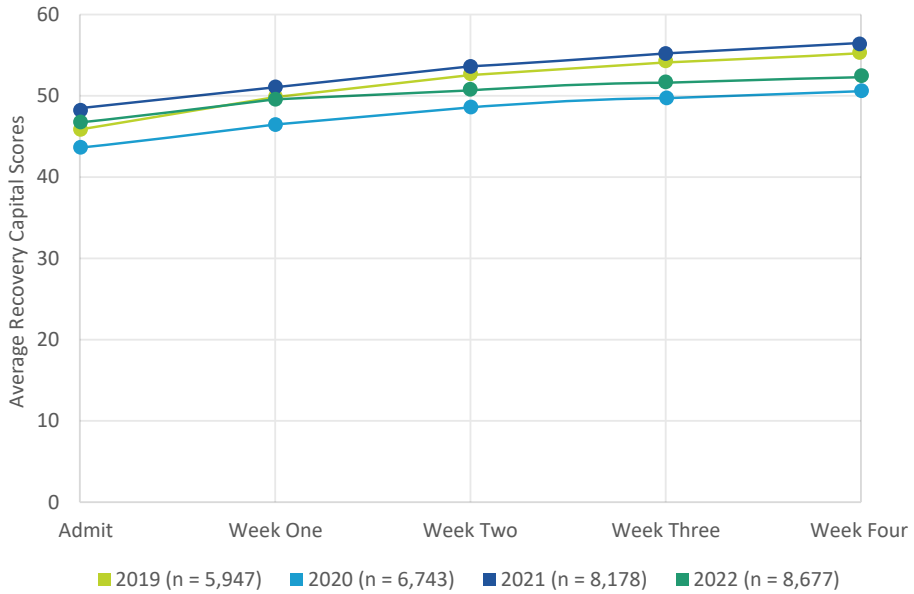
Instrument Description

The Brief Assessment of Recovery Capital (BARC-10) is a standardized assessment used to measure patient levels of recovery capital.[10] 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 observed in Patients (three-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.our treatments have had on patient outcomes throughout engagement in our clinical programs.have had on patient outcomes throughout engagement in our clinical programs.

OBSERVED INCREASE IN RECOVERY CAPITAL RESOURCES



12%

Increase in recovery capital resources that can support sustained recovery (2018-2022)

POST-DISCHARGE OUTCOMES

Cumberland Heights Foundation has been collecting post-discharge outcomes from patients for over five years. Today our post-discharge measurement program is supported through our Recovery Care Advocates (RCA) program and our Outcomes Program. Founded in 2017, the RCA program consists of Peer Recovery Support Specialists (PRSSs) who are trained to provide support for individuals who are early in recovery from Substance Use Disorder. Our RCAs assist our patients with peer support, identification of positive recovery resources, and accountability away from maladaptive behaviors associated with addiction.

The below visualization represents how our RCA and Outcomes Program synergistically support the collection of post-discharge outcomes.

Heart = Outcomes Program collection
Phone = RCA Contact Point

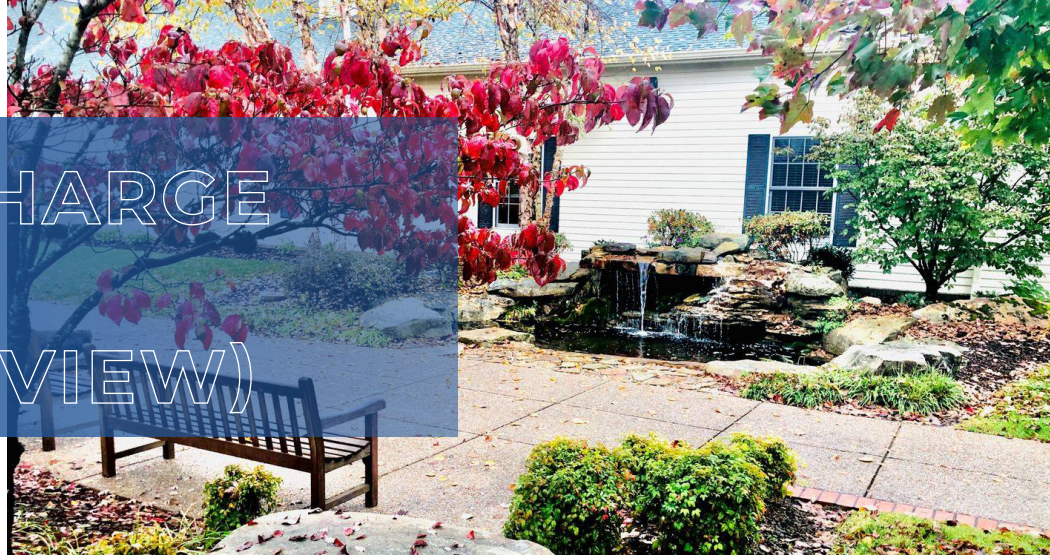
Measures Collected Post Discharge

Standardized Assessments:

- Depression (The Patient Health Questionnaire (PHQ-9))[4]
- Anxiety (Generalized Anxiety Disorder Scale (GAD-7))[6]
- Craving (The Craving Scale)[8]
- Recovery Capital (The Brief Assessment of Recovery Capital (BARC-10))[10]

Additional Measures: *Meeting Attendance, Use Days, Emergency Room Visits, Interactions with Law Enforcement, and Employment Status.*

POST-DISCHARGE RESULTS (3-YEAR REVIEW)

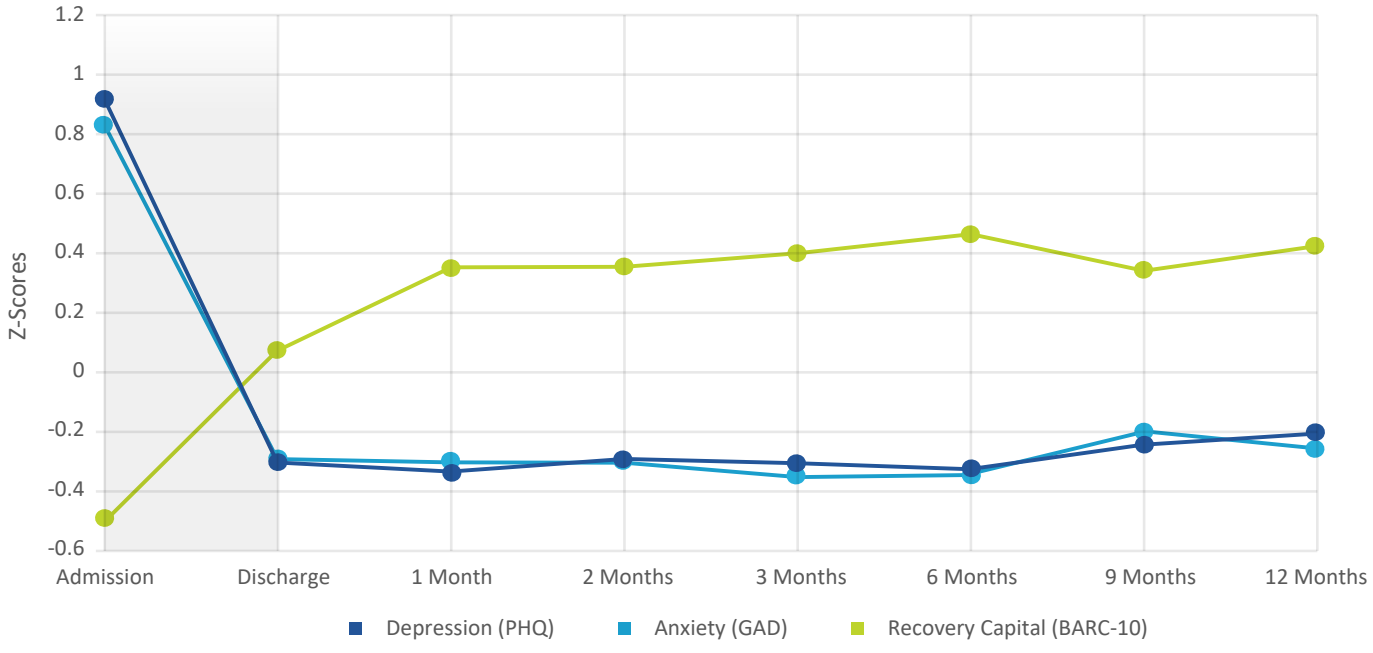


The following data (n = 4,367) were collected from (01/01/2020-12/31/2022). The sample remains homogeneous (72% male, 89% Caucasian, 65% Alcohol Use Disorder, 69% completed treatment, with an average age of 39 years, and an average length of stay of 36 days). These data demonstrate treatment outcomes observed through data collected over the last three years.

Longitudinal Symptom Reduction. Patient observed symptomatology maintained significant reductions through the first year-post discharge treatment services.

Decreased Readmission. Increased treatment dosage was associated with better post discharge outcomes (i.e., lower use days, higher recovery participation, and lower readmission rates).

Increased Abstinence. Patients who successfully completed our programs were more likely to report successful post discharge outcomes.



1st 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 LEVEL 3.5 CERTIFICATION BY CARF

ASAM LEVEL 3.7 CERTIFICATION BY CARF

AMERICAN SOCIETY OF ADDICTION MEDICINE FOUNDED 1954 ASAM

ASAM American Society of Addiction Medicine

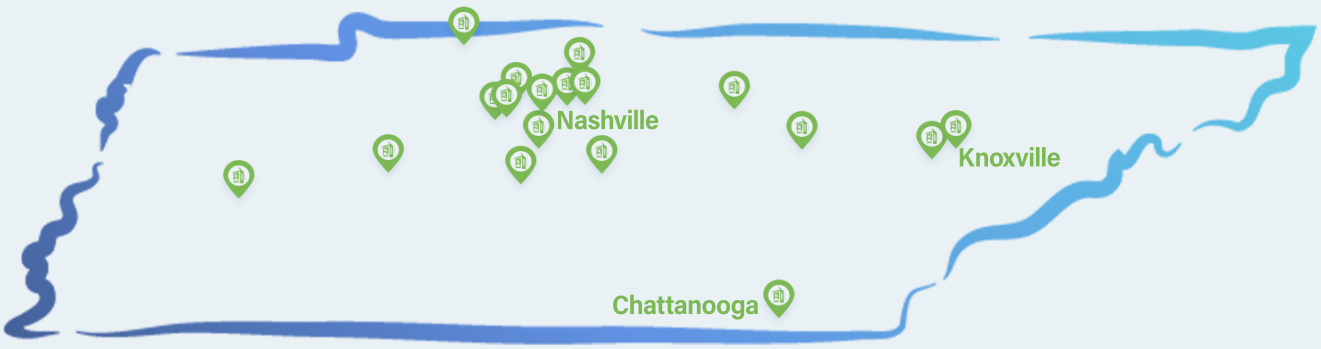
Cumberland Heights at a Glance

MISSION

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

LOCATIONS

Twenty (**20**) locations throughout Tennessee



EMPLOYEES

350 Employees

PATIENTS

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

TELEHEALTH

Intensive Outpatient and Individual Psychotherapy

TREATMENTS

Detox, Residential, Extended Care, Intensive Outpatient, Outpatient, Family Care, and more.

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