Centerstone Health Systems:
A Cross-Site Analysis of the CCBHC Model

By: Natasha Adris, Jordan Nelon, Andie Johnson, and Kelsie Dowdell

Special Thank You and Acknowledgement

Thank you to all Lead Evaluators, Research Associates, and Interns who have worked on all previous CCBHC projects. Their efforts ensured this data was available for the following report.

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Introduction

      Certified Community Behavioral Health Clinics (CCBHCs) clinics are designed to **integrate mental health, substance use disorder services and physical healthcare**. Each clinic across the nation is held to the **same set of certification criteria** involving timelines of access to care, staffing, quality reporting, and coordination with social services (SAMHSA, 2022). These criteria ensure that regardless of their background or ability to pay, **everyone who seeks care at a CCBHC has access to these essential services**. Required services that the CCBHC itself cannot provide must be offered through **direct partnerships with other organizations**.

      In 2015, the CCBHC Demonstration was created to improve accessibility to high-quality mental health and substance use treatment. The demonstration took place in eight states (Minnesota, Missouri, New Jersey, New York, Nevada Oklahoma, Oregon, and Pennsylvania). Following the demonstration's success, SAMHSA began to offer planning and expansion grants (CCBHC-E) to clinics in other states. The primary difference between CCBHCs in demonstration and non-demonstration states is that Medicaid is required to reimburse clinics in demonstration states through an enhanced prospective payment rate (Wishon & Brown, 2021). Clinical leadership and stakeholders continue to work with policy-makers in non-demonstration states, including those with Medicaid, to provide evidence that the CCBHC model is effective and to ensure that it remains sustainable.
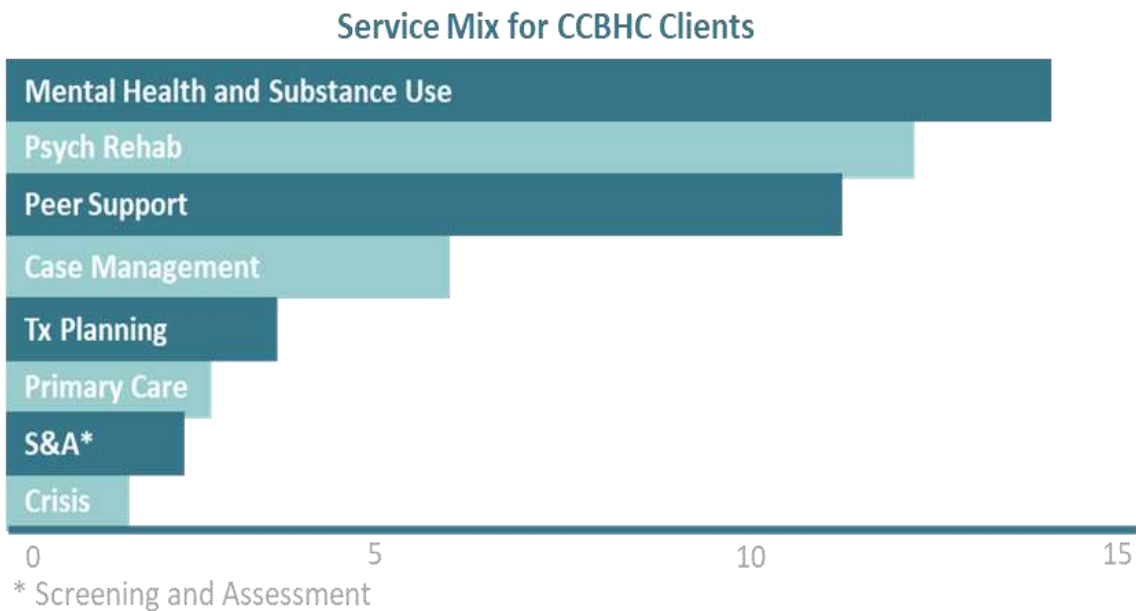
      Centerstone Health Systems consists of four CCBHCs in Florida, Illinois, Indiana, and Tennessee located in and serving the shaded areas below. The clinics in Illinois and Indiana were awarded the CCBHC-E grant in 2018 and again in 2020 while the clinics in Florida and Tennessee received their first grant in 2020.
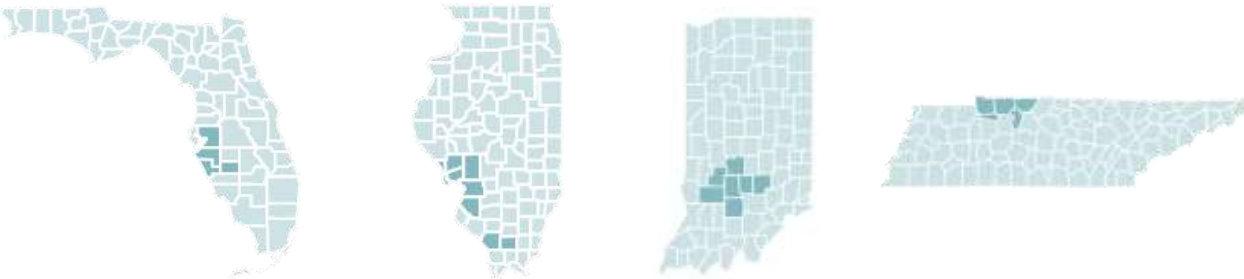
CCBHCs are **required to provide nine core services**:

1. Crisis mental health services
2. Screening, assessment, and diagnosis
3. Patient-centered treatment planning
4. Outpatient mental health and substance use services
5. Outpatient clinic primary care screening and monitoring
6. Targeted case management
7. Psychiatric rehabilitation services
8. Peer support, counseling, and family support
9. Intensive mental health care for veterans and those in the military

The graph below depicts each of the first eight required services by average hours provided to each client at Centerstone. The top three services utilized by clients were mental health and substance use outpatient care, psychiatric rehabilitation, and peer support.

Service Mix for CCBHC Clients

Service	
Mental Health and Substance Use	
Psych Rehab	
Peer Support	
Case Management	
Tx Planning	
Primary Care	
S&A*	
Crisis	

0   5   10   15

* Screening and Assessment

Enrollments and Demographics

36,976 adults & 12,701 children were served across the four clinics as of April 2022.

Gender

Female	59%
Male	40%
Other	1%

Race

White	77%
Black	14%
Other	8%
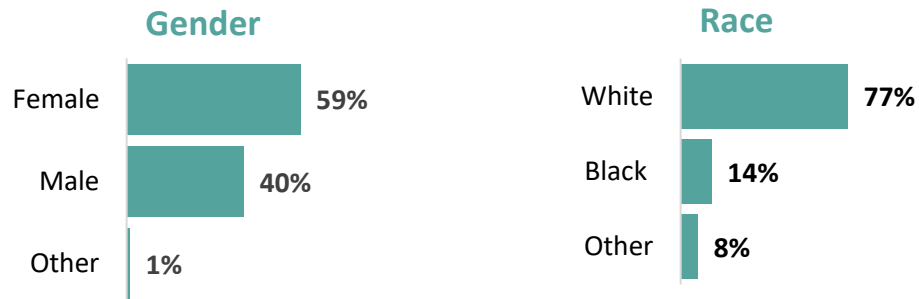
The CCBHC adult client population was predominantly **female** (59%), **non-Hispanic** (94%), and **white** (77%).

The average age was **39 years** for adults and **13 years** for children. The majority of clients (69%) were between the ages of 18-44.

Age Distribution of Adult Clients Served (N=4,493)

Age Group	Percent
18-25	~22
26-34	~27
35-44	~20
45-54	~16
55-64	~11
65-74	~4
75-84	~1
85-94	~0
95+	~0
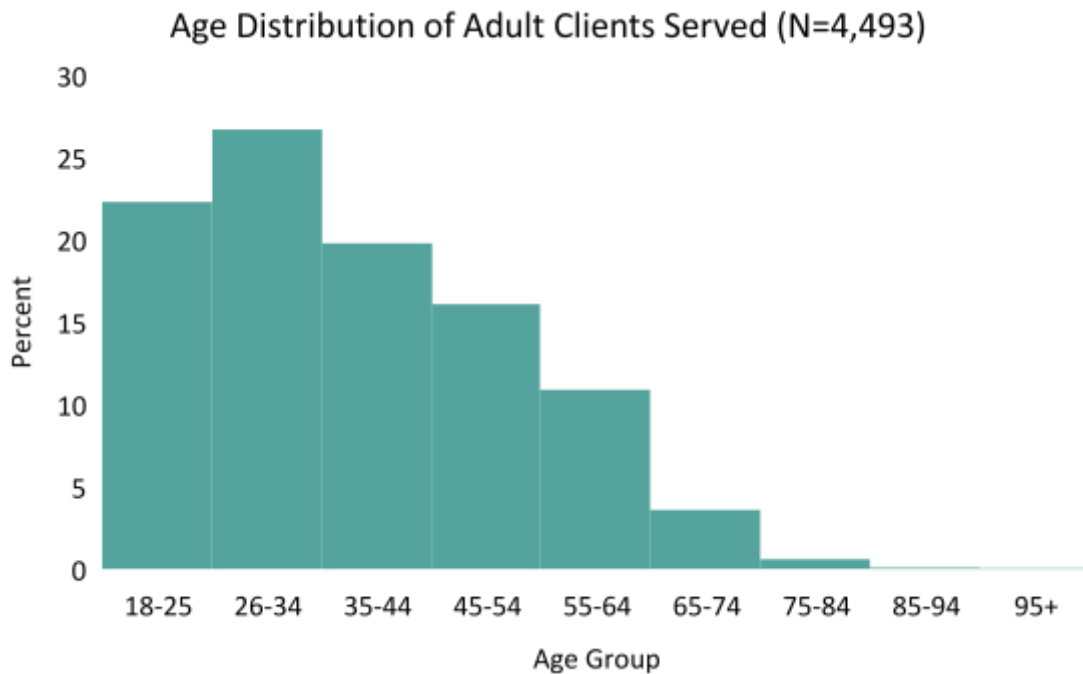
Improving Access to Services

With the implementation of the CCBHC model at Centerstone, several unique services were initiated due to this funding. For instance, Florida hired more providers and increased their capacity, including a nurse at the walk-in center to complete nursing assessments. In Illinois, intensive care management was initiated to serve high risk clients. In Indiana, nursing assessments were initiated and used to screen and refer clients to appropriate primary health care. Lastly, Tennessee utilized CCBHC funding to initiate MAT services for clients with substance use disorders, support lab draws that assess for metabolic syndromes and cardiovascular risks, and expand peer-wellness coaching.

As clinics adopted the CCBHC model separately, each utilized unique ways to identify and track clients, expand and provide services, update work flows, and structure their processes. For that reason, it is important to note the similarities and differences identified throughout this report with the mindset that although data may not be available in certain circumstances and specific geographic regions, this does not imply the service was not provided or established. Many services already existed prior to the adoption of the CCBHC model and therefore have clear designated pathways for clients who pursue care at Centerstone. This makes it difficult to track information through the CCBHC data collection methodology for certain sub-populations (i.e. MAT clients, Veterans services, criminal justice, etc.). As the CCBHC model continues to evolve at each clinic, lessons learned will be used to improve accuracy and standardization of data.

In addition to identifying new services initiated during CCBHC, changes in the number of clients served and number of services provided since the implementation of the CCBHC model were explored. Each state had a very unique trend that emerged when assessing this data longitudinally. For contextual reasons, the start of the CCBHC, occurrence of the pandemic, and transition back into the office are noted. It is also important to note the two different axes for number of clients (left) and service count (right). Florida and Illinois show an increase in number of clients served and service count per month post-CCBHC implementation. However, Tennessee and Indiana depict a different story. Conversations with the program directors indicated that, in Tennessee, decreases in number of clients and service provision were mainly due to significant staffing

issues that hindered capacity and productivity. In addition, the implementation of a new EHR system led to temporary decreases in productivity allowing staff to adjust to this new health system. In Indiana, increased competition with the private industry, reduced staffing and high turnover, and the COVID-19 pandemic have all acted as obstacles to maintaining access to services and high client counts.

Clients Served per Month at Illinois CCBHC
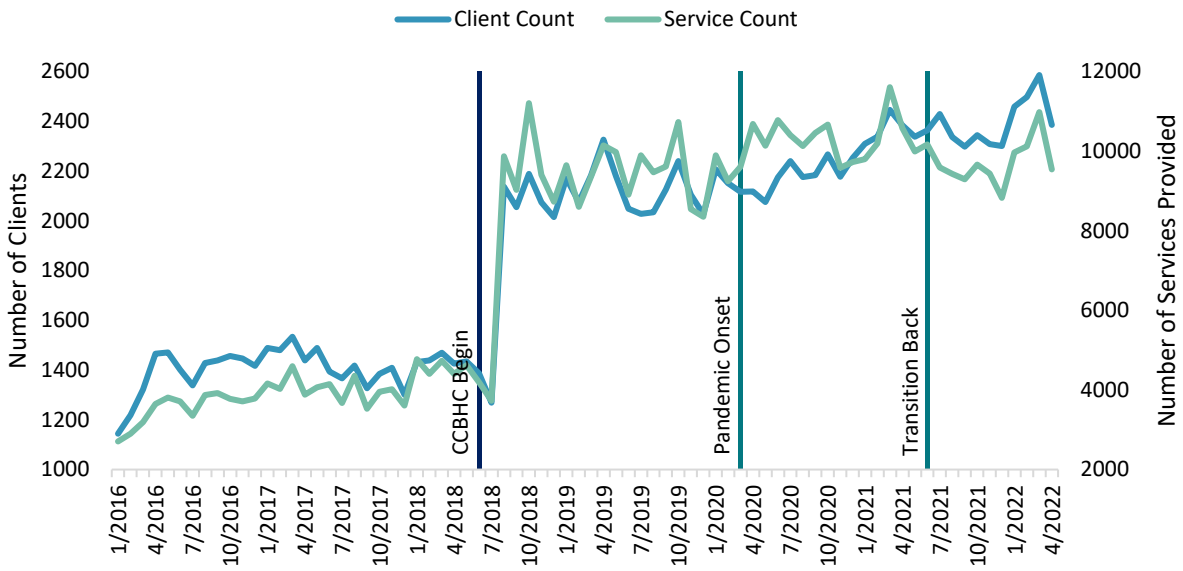
Clients and Services per month at Indiana CCBHC
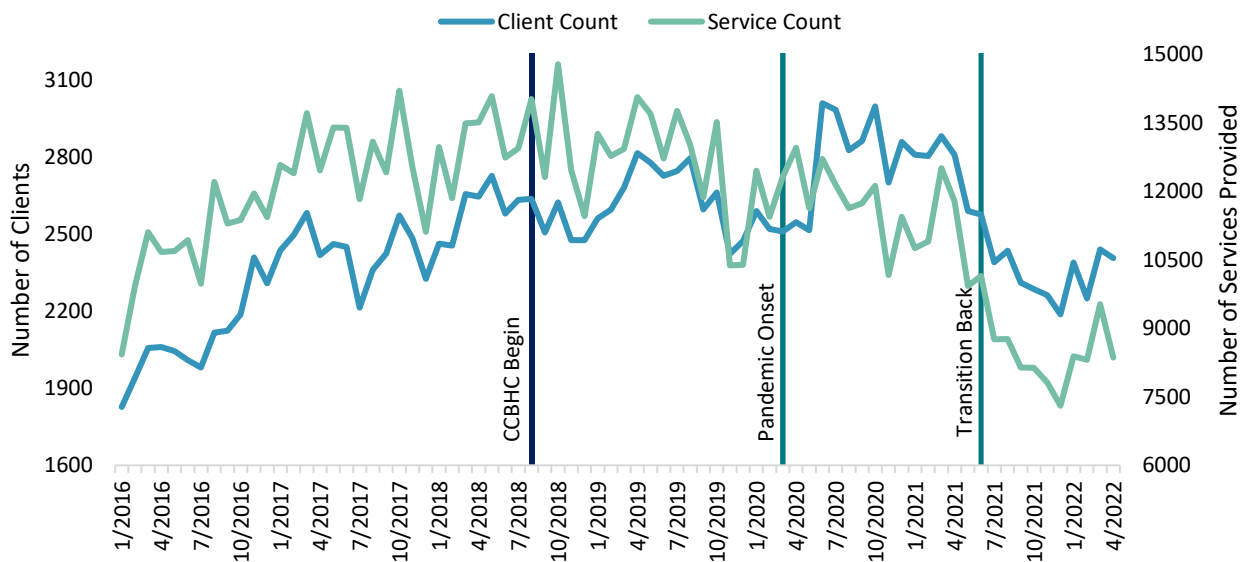
Clients and Services per month at Tennessee CCBHC
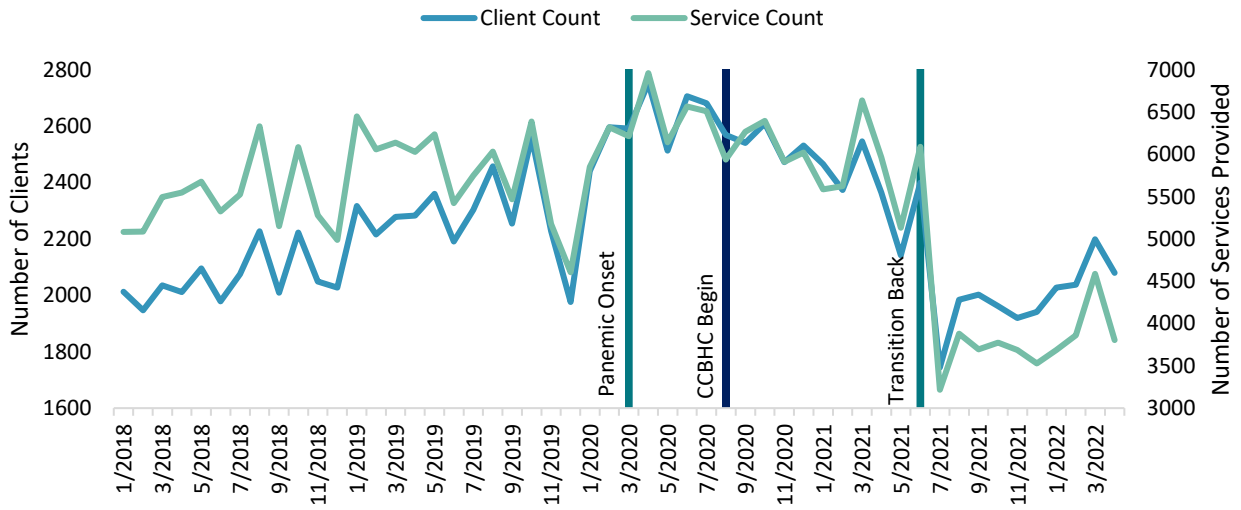
Clients Served per Month at Florida CCBHC
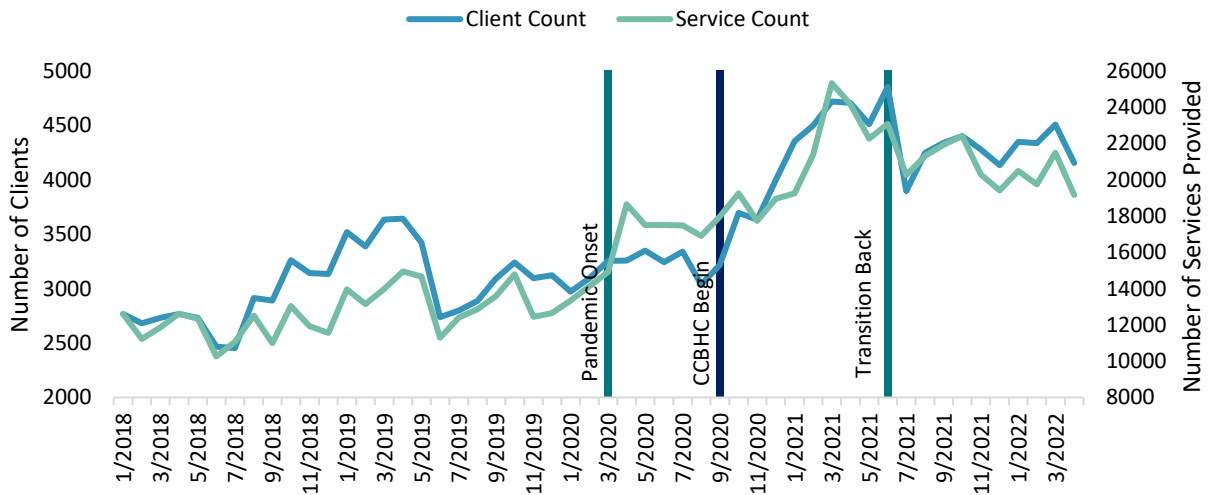
Timeliness of Care

In order to assess timeliness of care, data was obtained from Analytics regarding average days from request to intake, percent of intakes scheduled within 14 days of request, and the percent of intakes scheduled after 30 days of request. Intakes after hospital discharge were excluded. This data dashboard is still in development and is currently only available for Tennessee and Indiana for the time frame of July 2021 through May 2022. In Indiana, the average number of days from request to intake was 12.8. Approximately 70% of intakes were

scheduled within 14 days of the request and 6% after 30 days. Since July 2021, the maximum average number of days until scheduled intake was 23, and the minimum number of days was 9.4. Tennessee had an average of 20 days from request to intake. Approximately 23% of intakes were scheduled within 14 days of the request and 3% after 30 days. Since July 2021, the maximum average number of days until scheduled intake was 22, and the minimum number of days was 10. The target number of days to follow up is within two weeks to ensure engagement in care and avoid any adverse effects of delayed treatment.

Care Coordination

Care coordination as described by the Agency for Healthcare Research and Quality (AHRQ), involves "deliberately organizing client care activities and sharing information among all of the participants concerned with a client's care to achieve safer and more effective care. This means that the client's needs and preferences are known ahead of time and communicated at the right time to the right people, and that this information is used to provide safe, appropriate, and effective care to the client." All CCBHCs are responsible for care coordination, which SAMHSA describes as an activity rather than a service.

In the month of April 2022, a total of 224 staff members reported some form of case management or care coordination services across all four CCBHC clinic locations. Both Florida and Illinois had 67 staff performing case management or care coordination, whereas Indiana had 60 and Tennessee had 30. Through qualitative and quantitative data collection, it was evident that many care coordination activities were considered non-billable services, particularly the linkage of clients to social services such as housing, employment, transportation, etc.

The diagram shows "Care Coordinators" at the center, with arrows pointing outward to surrounding circles:
- New Referrals and Accessing Care
- Primary Care Provider
- Social Services (i.e. transporation, housing, education)
- Patient and Family
- Current Treatment Team
- Hospital Follow-Up
- Perform Assessments and Triage
- Monitor Compliance
- Advocate for Clients
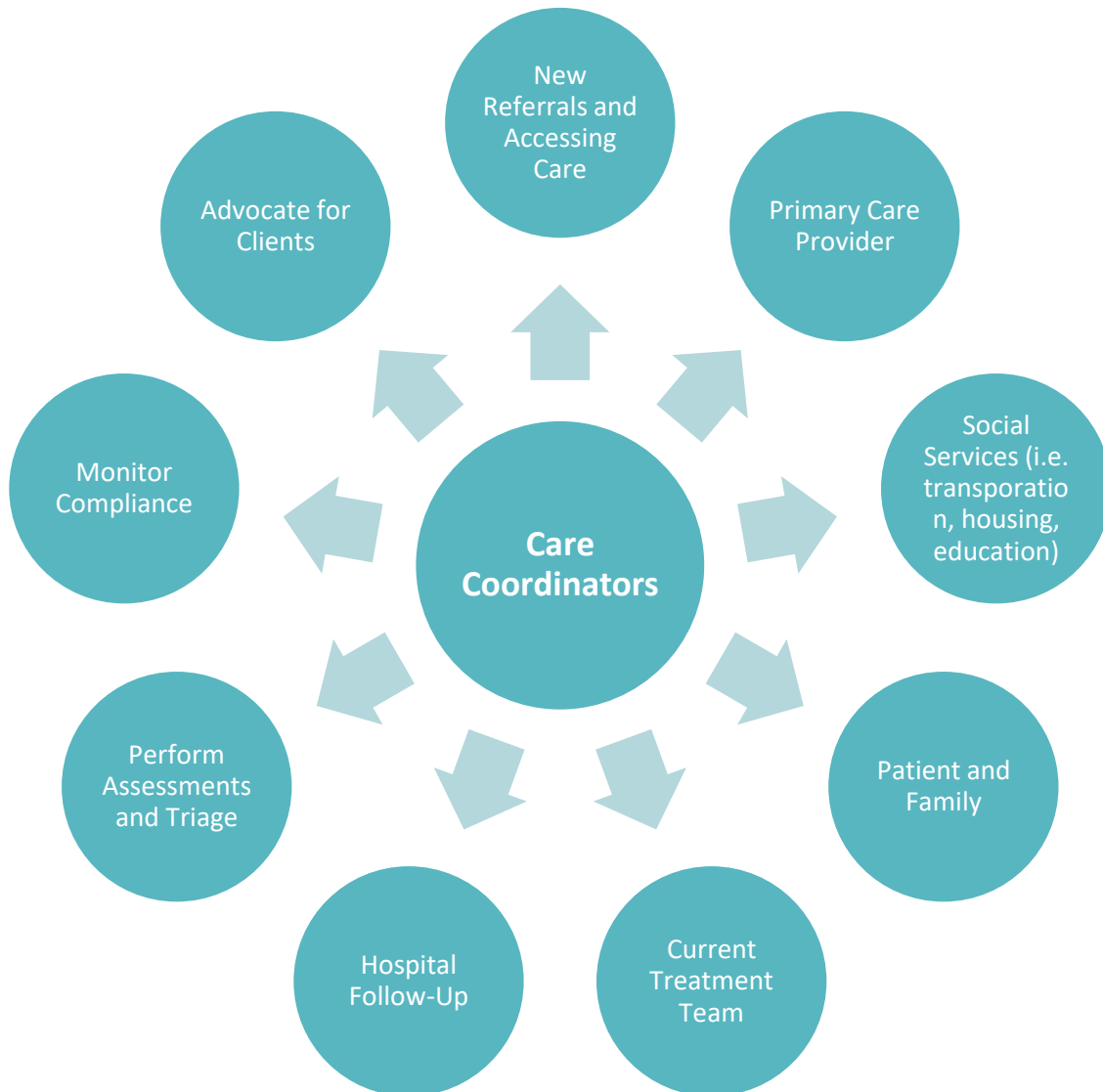
In an effort to measure social service provision, EHR system data was pulled illustrating that many services are grouped into categories without specifying the type of services received. For instance, Indiana uses the code "Life Skills" to categorize any services involving education, employment, social recreation, transportation, etc. This makes it difficult to accurately decipher and report what exact support Centerstone is providing in addition to mental, substance use, and primary care. As a result, one suggestion is to improve our tracking system of such social services, possibly within the EHR system, to ensure providers are able to identify which specific services have been provided to their clients. This

information is essential to advocate for further funding and support of these typically non-billable services.

Medication-Assisted Treatment (MAT) Services

MAT services specifically utilize medications, in combination with counseling and behavioral therapy, to provide a holistic approach to treatment of substance use disorders. The medications used in MAT such as naltrexone, disulfiram, buprenorphine, methadone, and naloxone, are approved by the Food and Drug Administration and have been clinically proven to successfully treat these disorders and help sustain recovery (SAMHSA, 2022). Furthermore, MAT is used to prevent or reduce opioid overdose. In 2019, there were 15.5 opioid related deaths per 100,000 population (CDC, 2021). When assessing state opioid dispensing rates from 2020, Tennessee has the third highest rate of 68.5 per 100 persons, nationally, followed by 56.9 per 100 people in Indiana, 43.4 per 100 people in Florida, and 40.2 per 100 people in Illinois (CDC, 2021).

There are many legalities and barriers that have emerged in regard to the provision of MAT services. For instance, in order for a provider to prescribe buprenorphine, they must apply for and receive a DATA 2000 waiver (Foney & Mace, 2019). States that have tried to offer MAT services tend to report inadequate training, insufficient DATA 2000-waivered providers, and that clinics felt the substance use disorder workforce was not yet capable of addressing the opioid crisis (SAMHSA, 2019). From the client's perspective, the most significant barrier for engagement in MAT was stigma. Therefore, unsurprisingly, the top priorities in providing MAT were eliminating stigma and improving provider capacity (Foney & Mace, 2019).

Each state has its own policy history and barriers regarding the implementation of MAT. Tennessee in particular has had increased difficulty in implementation compared to the other three states in which Centerstone is located. In 2016, the Tennessee Department of Mental Health and Substance Abuse Services began the process of licensing clinics with the hope of better regulating opioid treatment. In 2018, Tennessee was one of four states with buprenorphine guidelines that were endorsed by legislature. These guidelines are updated each year (Schlesinger, et al., 2018). A report for Indiana urges their

policy makers to follow in Tennessee's footsteps by turning guidelines into regulatory policy (The Pew Charitable Trusts, 2018).

Florida has received a State Opioid Response grant since 2018 and Florida's Drug Overdose Surveillance and Epidemiology grants to expand MAT services across the state (Statewide Drug Policy Advisory Council, 2020). In 2019, Centerstone of Illinois was one of five major organizations that was designated an A-MAT Network pilot project funded by an Opioid Crisis Grant that the Illinois Department of Human Services received from SAMHSA (State of Illinois Opioid Action Plan Implementation Report, 2020).

Due to CCBHC funding, the Tennessee clinic was able to initiate their MAT program. As their current CCBHC grant comes to a close, a Screening, Brief Intervention, and Referral to Treatment grant was awarded which is geared toward early intervention and treatment of people with substance use disorders. Funding from this grant can temporarily assist with maintaining the MAT program for the next five years. Further sustainable funding sources (i.e. state support) is needed to continue this service.

The following table is an overview of the medications each state offers and what substance use disorder they are used to treat. The *n* reflects how many clients received MAT services among those who had a completed baseline NOMs during the current CCBHC grant.

CCBHC Clients Receiving MAT by State

Medication	Treatment Purpose	Florida (n=30)	Illinois (n=21)	Indiana (n=24)	Tennessee (n=60)
Acamprosate	Alcohol use	x		x	
Antabuse (disulfiram)	Alcohol use		x		
Buprenorphine	Opioid use	x		x	x
Buprenorphine-Naloxone	Opioid use	x	x	x	x
Methadone	Opioid use		x		
Naltrexone	Both	x	x	x	x
Suboxone	Opioid use	x	x	x	x
Vivitrol	Both	x		x	x

Significant Changes in Client Outcomes

National Outcome Measures (NOMs)

The NOMs is made of 10 domains which aim to embody meaningful, real-life outcomes for people who are striving to attain and sustain recovery, build resilience, work, learn, live, and participate fully in their communities. The NOMs matrix represents the beginning of a state-level reporting system that, in turn, should create an accurate and current national picture of substance-abuse and mental-health services (Case Western Reserve University, 2022). Data is collected starting at baseline followed by 6-month intervals while the client is receiving services from the CCBHC.

The NOMs is administered to all clients intended to be followed throughout their time at Centerstone. Although the entire clinic is considered a CCBHC, the criteria used to decipher which clients will be tracked and monitored during their time at Centerstone differs between states. Currently, Florida and Illinois staff complete either administrative or interview-based NOMs for all clients seeking care in their clinics during the grant period, whereas Indiana staff use to follow this method but then shifted in summer 2021 to waiting until the first appointment was completed. Tennessee staff administer the full interview-based NOMs to a select sample of clients who have a kept appointment post-intake. For

this cross-site analysis, the full interview-based data collected from CCBHC adult client's at all four sites is utilized.

Florida	Illinois	Indiana	Tennessee
Intake assessments & paperwork	Intake assessments & paperwork	Intake assessments & paperwork	Intake assessments & paperwork
Research staff contact clients via phone	Clients with kept appointments post intake are contacted by Care Coordinator	Clients with kept appointments post intake are contacted	Clients with kept appointments post intake are contacted by program staff
Clinical baseline NOMs completed by RAs if client is reached	Clinical baseline NOMs completed by Care Coordinator	Clinical baseline NOMs completed by RAs if client is reached	Clinical Baseline NOMs completed by Care Coordinator
Administrative NOMs completed if client is not reached	CCBHC Health Assessor contacts clients for biyearly reassessments	Administrative NOMs completed if client is not reached	RAs contact for biyearly reassessments
RAs contact clients for biyearly reassessments		RAs contact clients for biyearly reassessments	

Mental Health

Depression and anxiety are the two most common diagnoses among CCBHC clients. At baseline, the three most common mental health related symptoms that CCBHC clients reported most or all of the time in the past 30 days include nervousness (49.7%), restlessness (49.1%) and everything is an effort (41.2%).

When comparing baseline to 6-month reassessment data (n=1,452), statically significant improvements ($p<0.001$) were found among all symptomologies (i.e., nervousness, hopelessness, restlessness, depressed, effort, and worthlessness). The largest improvements were found among the following:

42%
Reported a **decrease**
in nervous feelings
(n=594)

40%
Reported a **decrease** in
feeling everything is an
effort (n=565)

39%
Reported a **decrease**
in hopeless feelings
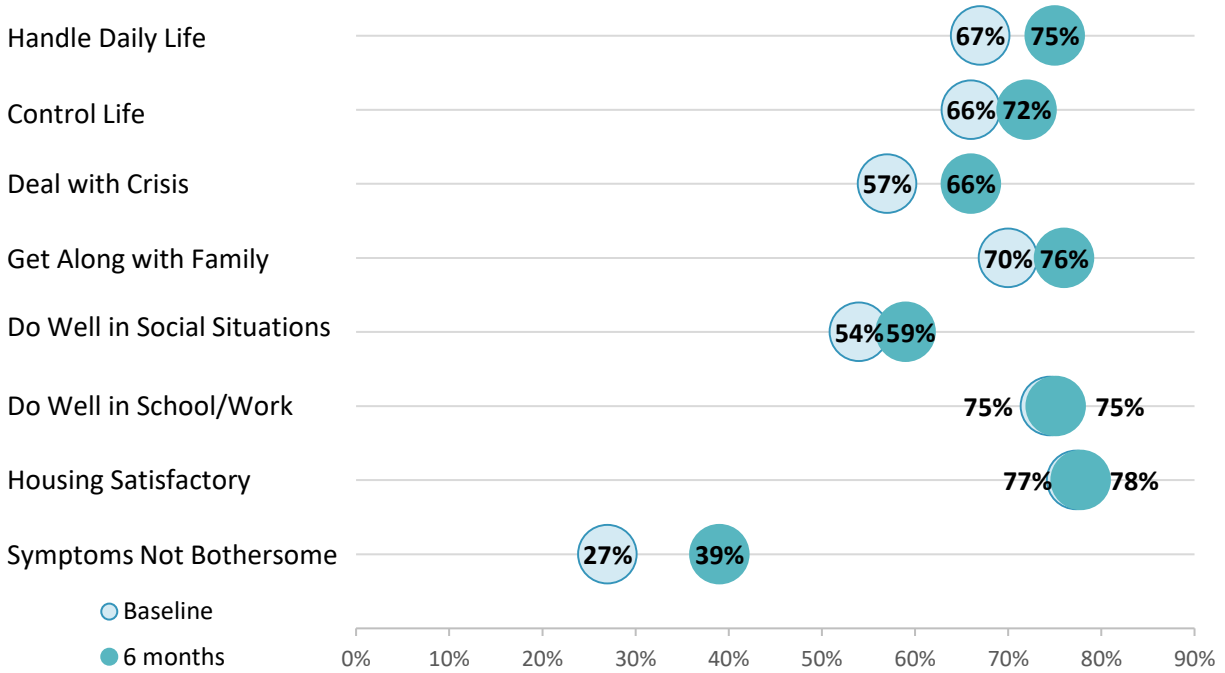(n=552)
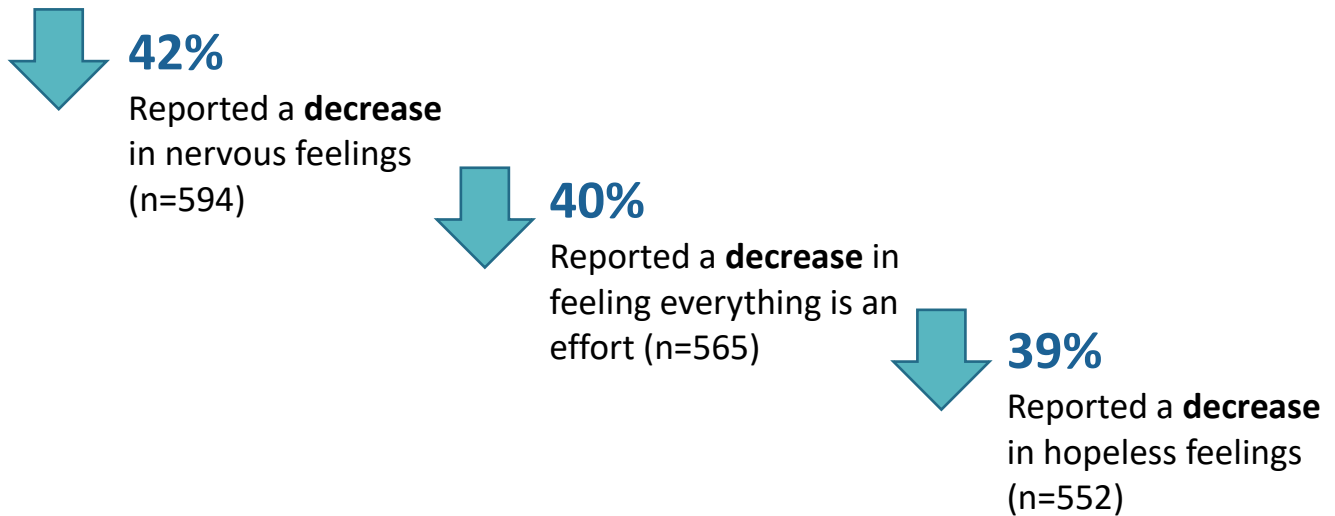
Statistically significant outcomes were also found in all areas of daily functioning. Clients who stayed in treatment for six months showed improvements in their ability to handle everyday life, control their lives, deal with crisis, get along with family, do well in social situations, perform vocational activities, and in the severity of their symptoms ($p<0.001$). Satisfactory housing situations also showed a positive trend ($p<0.001$).

In addition, improvements at 6-months were seen among clients who specifically reported lower scores at baseline. When assessing clients ability to deal with everyday life, 58% of clients who did not feel they could handle daily life at baseline reported that they could after 6 months (n=282). Another 51% (n=213) of clients who did not get along with their family at baseline reported they did get along with their family after 6 months, and 52% (n=176) of clients who did not perform well in school or work at baseline reported positive outcomes after 6 months.

Percent of CCBHC clients who Agree or Strongly Agree (n=1,452)

Category	Baseline	6 months
Handle Daily Life	67%	75%
Control Life	66%	72%
Deal with Crisis	57%	66%
Get Along with Family	70%	76%
Do Well in Social Situations	54%	59%
Do Well in School/Work	75%	75%
Housing Satisfactory	77%	78%
Symptoms Not Bothersome	27%	39%

○ Baseline
● 6 months

Substance Use

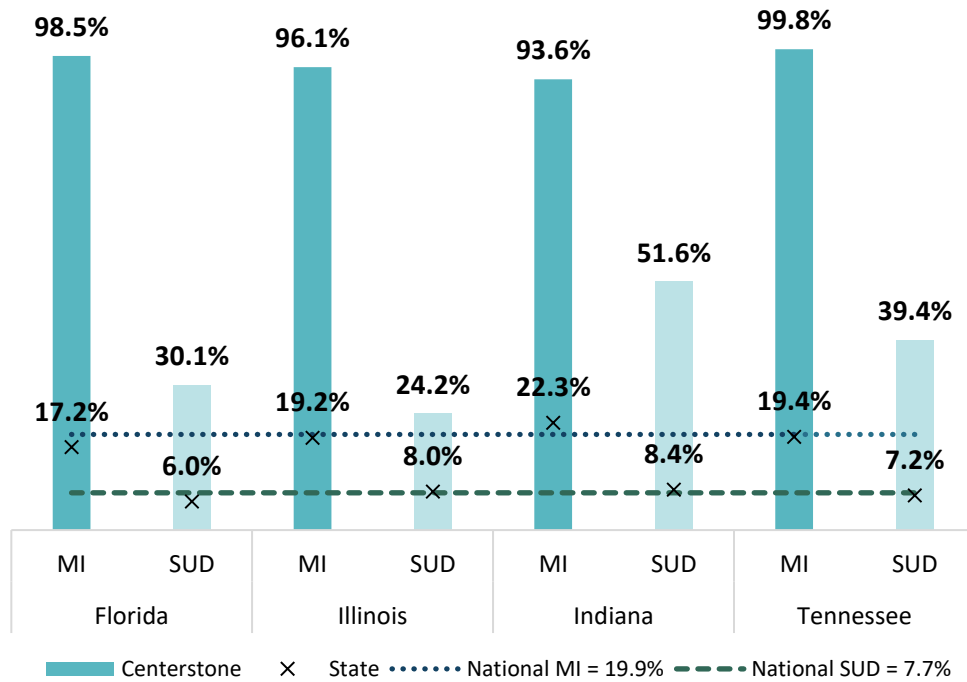When assessing prevalent diagnoses among this sample, it was evident that substance use diagnoses are less common compared to mental health diagnoses (MI). The majority of substance use disorders (SUD) among CCBHC clients were alcohol use disorder (14.3%; *n* = 2,400), cannabis use disorders (13.2%), and opioid use disorders (10.5%). For clients who reported any use of a substance at baseline, utilization was compared to 6-month reassessments to assess how many clients stopped or decreased use. The highest percent change was found in opioids, with 64% reducing both street (n=7) and prescription (n=23) opioid use. Marijuana, alcohol, and tobacco were the most frequently reported substances at baseline, with 27%, 21%, and 14%, respectively, reducing or abstaining from use at 6-months.

64% **Decreased** opioid use (n=30)

27% **Decreased** marijuana use (n=94)

21% **Decreased** alcohol use (n=109)

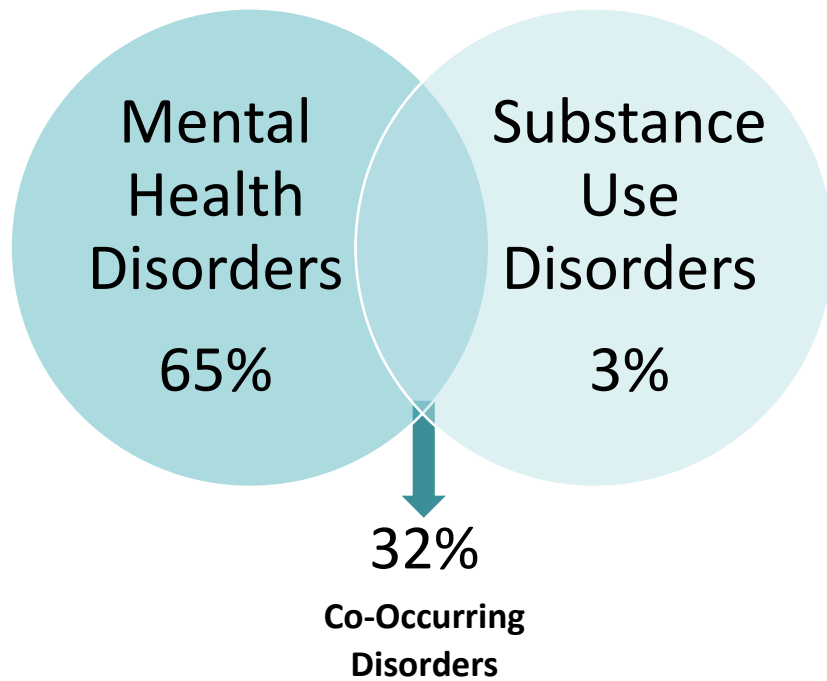**14%** **Decreased** tobacco use (n=93)
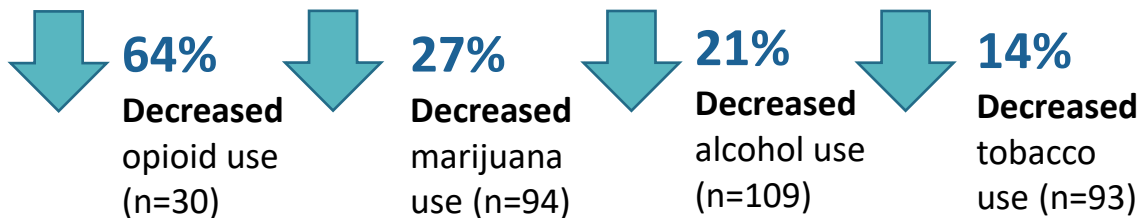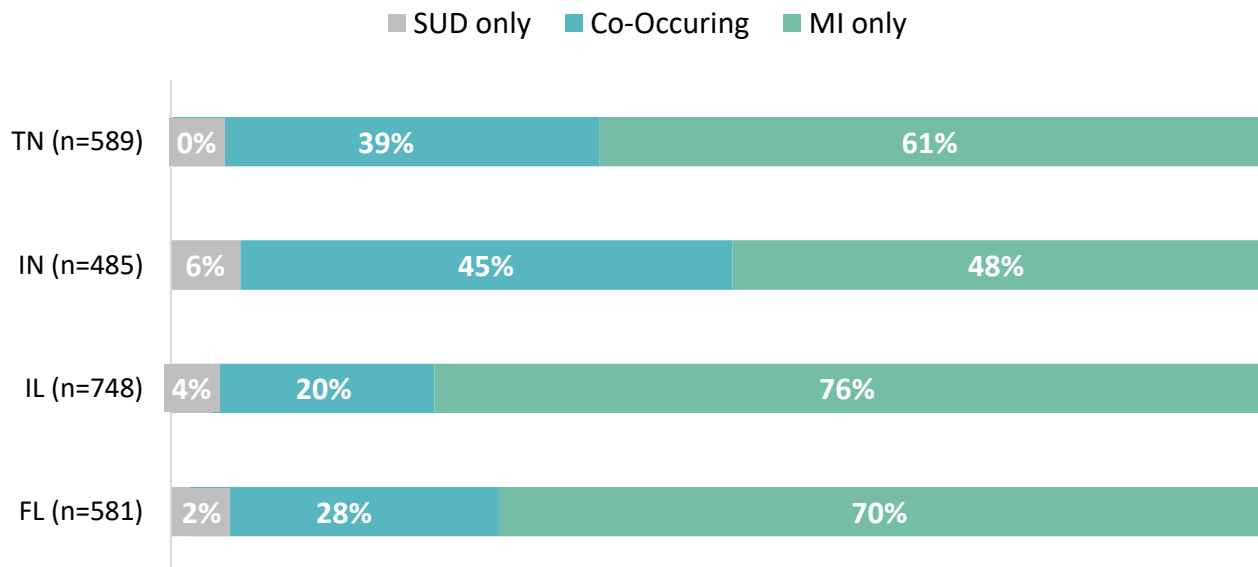
Diagnoses of CCBHC clients (n=2,403)

*State and National data was collected from Mental Health America (2022) which synthesizes information from SAMHSA national surveys. Diagnoses were pulled from EHR and includes data from 2020-2022.

Population level data from 2019 indicates that of the estimated 19.3 million U.S. adults with substance use disorders, 49.22% have a co-occurring mental illness. Across all four states, 32% of clients had a co-occurring mental illness and substance use disorder. When broken down by state, it is evident that the majority of clients with substance use disorders also have a co-occurring mental illness. Only 71 clients (3%) were found to have only substance use diagnoses. However, qualitative interviews with project directors indicated in some circumstances staff have been adequately trained in mental health care but lack the same adequate training and resources in substance disorder identification and treatment. Further training among providers to increase understanding of the ICD coding system in the EHR system can help improve identification and treatment of co-occurring conditions.

Mental
Health
Disorders

65%

Substance
Use
Disorders

3%

32%

**Co-Occurring
Disorders**

Co-Occuring and Independent Diagnoses Among CCBHC Clients

■ SUD only   ■ Co-Occuring   ■ MI only

TN (n=589) 0% 39% 61%

IN (n=485) 6% 45% 48%

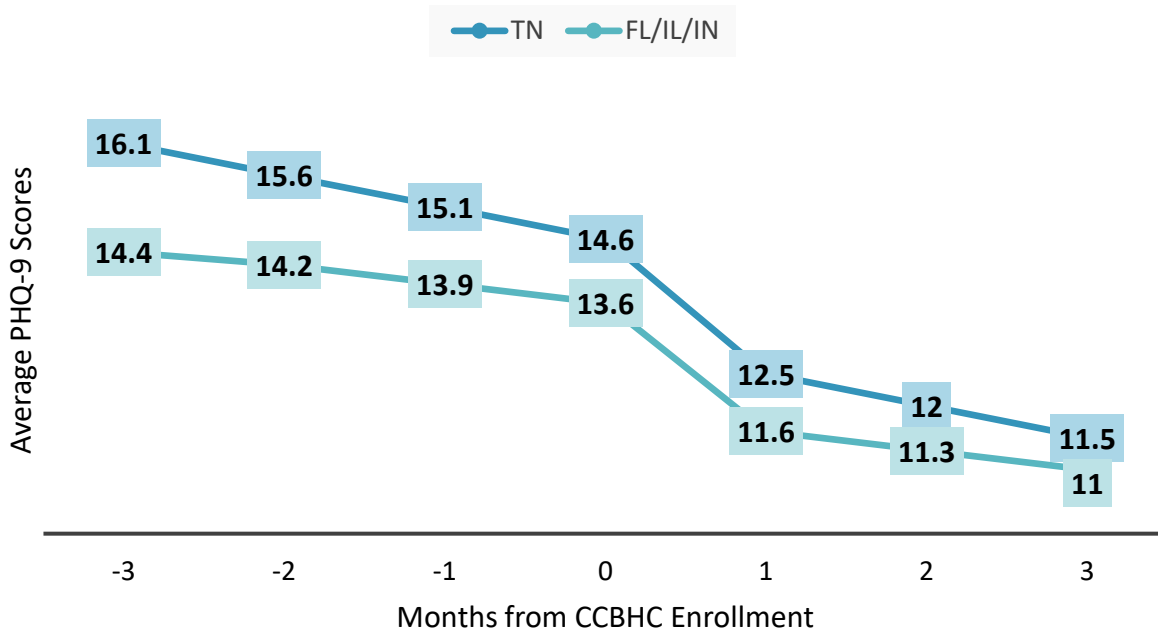IL (n=748) 4% 20% 76%

FL (n=581) 2% 28% 70%
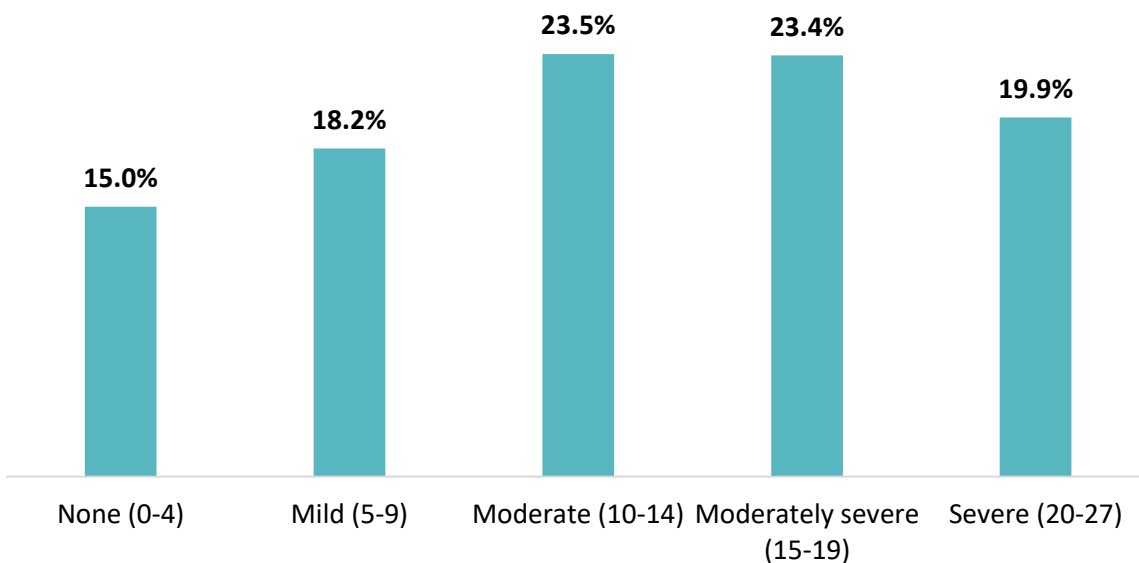
Patient Health Questionnaire (PHQ-9)

The PHQ-9 is administered to all clients at Centerstone and is used as a screening tool to aid in the diagnosis and symptom tracking of depression. Scores range from 0-27 with higher scores indicating greater severity of depression (i.e. 0-4 none, 5-9 mild, 10-14 moderate, 15-19 moderately severe, 20-27 severe). A

five point change in PHQ-9 score is considered clinically significant (Kroenke, 2021). Based on PHQ-9 scores of clients before and after CCBHC admission, it is evident that PHQ-9 scores significantly dropped, by 1.7 point, once the clients entered CCBHC services.

Changes in PHQ-9 Score among Pre-Existing CCBHC Clients

Legend: TN, FL/IL/IN

Months from CCBHC Enrollment	-3	-2	-1	0	1	2	3
TN	16.1	15.6	15.1	14.6	12.5	12	11.5
FL/IL/IN	14.4	14.2	13.9	13.6	11.6	11.3	11

Y-axis: Average PHQ-9 Scores
X-axis: Months from CCBHC Enrollment

Depression Severity Scores at Baseline (n=1,454)

Category	Percentage
None (0-4)	15.0%
Mild (5-9)	18.2%
Moderate (10-14)	23.5%
Moderately severe (15-19)	23.4%
Severe (20-27)	19.9%

Among all four states, baseline PHQ-9 scores for CCBHC clients had an average of 13 (SD= 7; n=1454), which indicates a moderate depression severity score. At a score of 15 or higher, close monitoring and intensive services are necessary to ensure depression severity does not worsen. For instance, in Florida, clients with a PHQ-9 of 15+ will be administered a PHQ-9 at every visit until scores reach less than "moderately severe." The PHQ-9 serves as an important tool to monitor depression severity over time and if used appropriately, can help guide treatment and counselling sessions.

When matching baseline and 6-month PHQ-9 screenings, Illinois had the highest number of matched pairs (n=224). At six months, a statistically significant improvement was found among Illinois CCBHC clients' PHQ-9 scores (p<.001). Due to small sample sizes in the other three states, analysis was limited to Illinois. Upon further investigation, PHQ-9 administration and frequency was found to be sporadic and inconsistent across all CCBHC sites. One suggestion to improve upon monitoring progress for the time being would be adding the PHQ-9 screener to the NOMs baseline and reassessment surveys to ensure consistency and standardization for the clients being enrolled in the CCBHC tracking process. This would lead to missing data for individuals not being tracked through NOMs. While there are currently flags in the Avatar system to remind providers to complete PHQ-9s, the reminders can be bypassed. In order to ensure long-term sustainability post-grant funding, the goal is to integrate this screening into a clinical process that follows a specific timeline for administration.

Recommendations: Significant Changes in Client Outcomes
- Standardize criteria for enrolling clients to be tracked and monitored for all CCBHC states
- Increase provider competency in all four states for identifying and treating substance use and co-occurring disorders i.e. training to increase understanding of the ICD coding in the EHR system
- Integrate routine and consistent PHQ-9 screening into clinical processes for all states to ensure long-term sustainability as well as more reliable and valid analysis

Special Populations

Sexual Minorities

Sexual minorities, such as individuals who identify as gay, lesbian, bisexual, or transgender, are known to experience unique health disparities. These individuals have increased susceptibility to health problems such as substance use, mental illness, cancers, HIV/AIDs, and sexually transmitted infections (Albuquerque et al., 2016) while at the same time being poorly served in health care settings due to discrimination and prejudice from providers and medical institutions (Whaibeh et al., 2019). Utilizing data from the 2014-2018 National Mental Health Services Survey, the proportion of U.S. mental health clinics that offered LGBT-tailored mental health services were found to have decreased by approximately 6% over time (Chen et al., 2020). More recent data is needed to understand whether this trend persisted after 2018, and special attention is warranted to ensure LGBT-tailored services are available, accessible, and provided by culturally competent staff (Bonvicini, 2017).

According to the 2019 National Survey on Drug Use and Health, 7.6 million lesbian, gay, and bisexual (LGB) adults had a mental illness and/or substance use disorder. Treatment gaps among this special population are apparent. For instance, of the LGB individuals with serious mental illness, 38.2% of young adults (18-25 years) and 27.9% of adults (26 years or older) received no treatment in 2019. Among LGB individuals with substance use disorders, 86.4% reported no treatment, which was defined as not receiving treatment at any location including a hospital, rehab center, mental health center, emergency department, private doctor, prison/jail, or self-help group. For individuals who did receive treatment, self-help groups were ranked the highest. Based on this information, LGBTQ+ individuals might feel more comfortable seeking help from their own peers rather than from medical providers. Therefore, emphasizing peer support services and improving cultural competency is of upmost importance.

LGBTQ+ Enrolled in Centerstone CCBHCs (N=4,334)
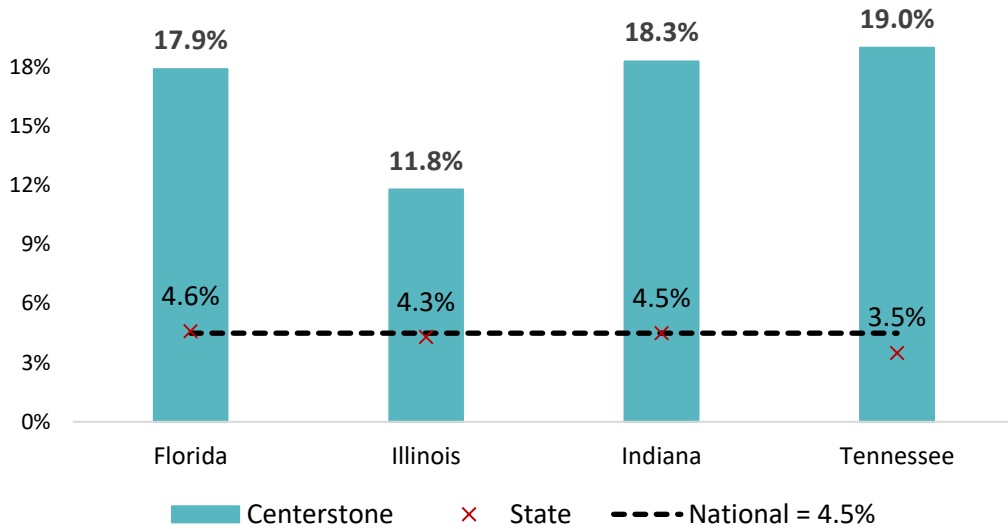
*State and National data was collected from The Williams Institute (2019)

Count distribution of LGBTQ+ Status among CCBHC Clients
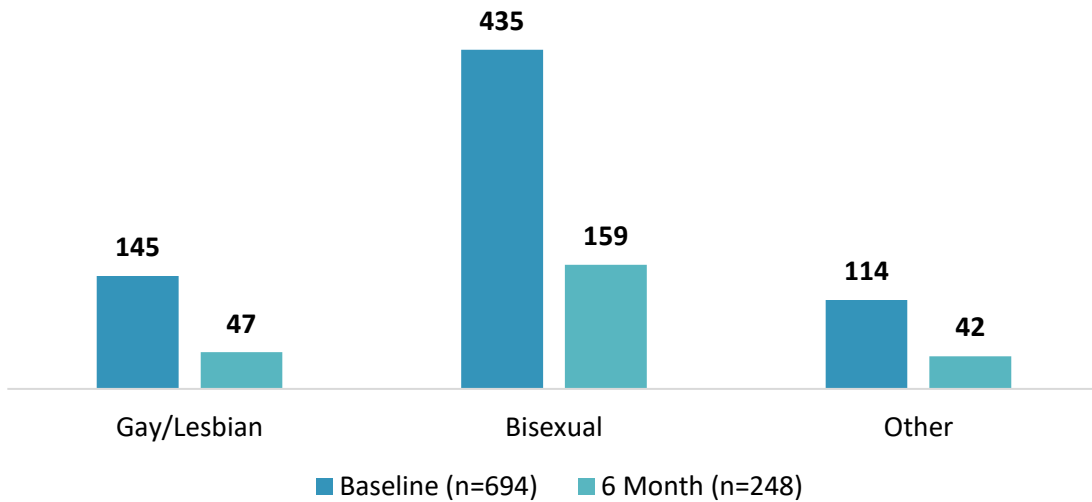
Among Centerstone's four CCBHCs, approximately 16% (n=694) of CCBHC clients identified as LGBTQ+ at baseline. While sexual identity is not asked at six-months, 18% (n=248) of clients remaining in services were LGBTQ+. When trying to obtain sexual identity information for all Centerstone clients, it was discovered that this information is not collected systematically through the EHR system, but instead individual clinics often obtain this information during their intake assessment.

% Distribution of LGBTQ+ Status among CCBHC Clients

Baseline (n=694)   6 Month (n=248)

- Gay/Lesbian: 21%, 19%
- Bisexual: 63%, 64%
- Other: 16%, 17%
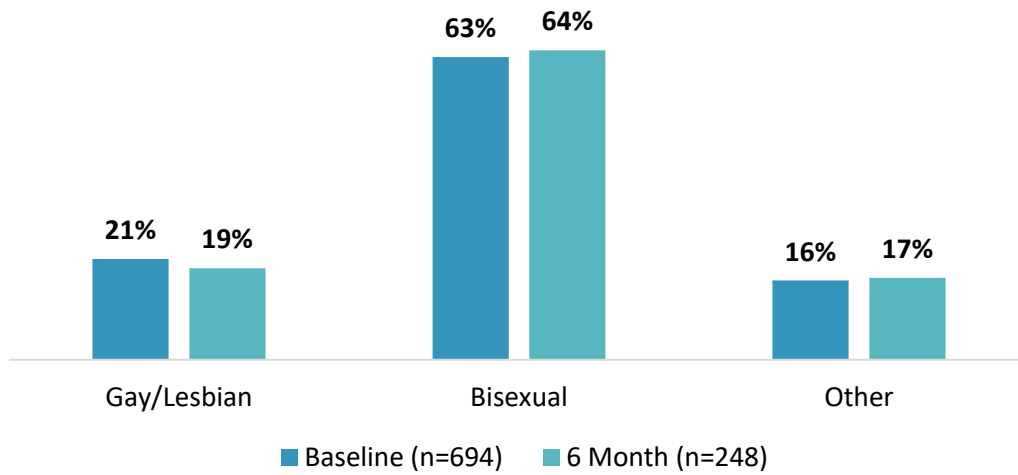
Homelessness

Homelessness is a multifaceted public health issue requiring special attention. According to the 2020 Annual Homeless Assessment Report created by the U.S. Department of Housing and Urban Development, on a single night in 2020, approximately 580,000 individuals were experiencing homelessness in the United States. With the pandemic beginning in March of 2020, data indicated that 2020 is the first year more individuals experiencing homelessness were unsheltered than sheltered (7% increase). Demographically, males (60%) and minorities such as African Americans and indigenous people are over represented among the homeless populations. Despite making up only 12% of the total U.S. population, individuals identifying as black or African American accounted for 39% of all people experiencing homelessness. Likewise, individuals identifying as Hispanic or Latino accounted for 23% of this population while representing only 16% of the total U.S. population.

Homeless Enrolled in Centerstone CCBHCs (N=4,493)
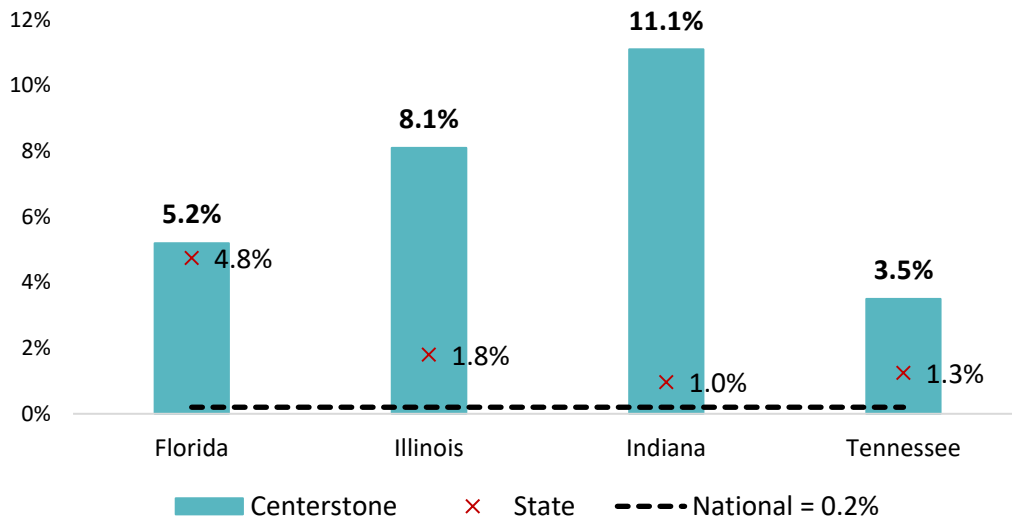
*State data collected from United States Interagency Council on Homelessness (2020). National data was collected from the Council of Economic Advisors (2019)
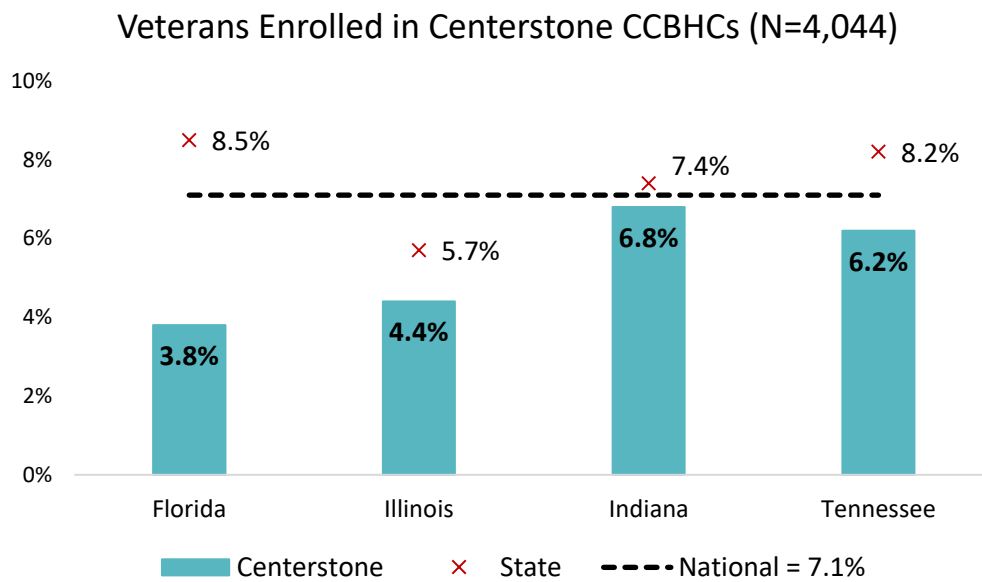
Of the 68 individuals with a six month reassessment who reported at least one day of homelessness at baseline, 38 (55.8%) were male, 23 (34%) were black, and 2 (3%) were Hispanic or Latinx. Additionally, major depressive disorder was the most common primary diagnosis (n=17) followed by anxiety/dissociative disorders (n=11), and substance use disorders (n=14). Over 84% (n=55) had experienced past trauma and 71.6% (n=48) were unemployed.

Furthermore, individuals experiencing homelessness are often found to be dealing with trauma while also being at risk for emotional and behavioral problems, chronic health conditions, and mental and substance use disorders (SAMHSA, 2021). The 2015 Annual Homeless Assessment Report indicated that over half of adults living in supportive housing had a mental disorder or a co-occurring mental and substance use disorder. This further illustrates the particular need to facilitate access to timely care (preventative and treatment) and social supports to prevent exacerbation of symptoms and disease progression.

Veterans Status

Veterans are known to have a variety of unique risk factors, protective factors, and prevalent health issues related to mental health and substance use. Compared to civilians, veterans are more likely to engage in smoking (25% of male

and 14.8% of female veterans), while maintaining high levels of physical activity (18% of male and 17% of female veterans were inactive; Schult et al., 2019). This subpopulation has been found to have higher rates of anxiety, depression, and sleep disorders (Schult et al., 2019). A study of enlisted soldiers and veterans with service-related disabilities in the process of transitioning to civilian life were four times as likely to have moderately severe or severe depression and twice as likely to be prescribed an opioid (Bond et al., 2020). About 12.3% of the non-Veteran general population screen with high PTSD symptoms while 10.3% of veterans in the general population screen positive for moderate to severe depression. The rate of PTSD symptoms in this sample was 47.1% for veterans and 26.7% for those who were still active duty. Depression rates were very similar. This indicates that in addition to higher rates than the general population, psychological distress may increase after separation from the military (Bond et al., 2021).

Veterans Enrolled in Centerstone CCBHCs (N=4,044)

Bar chart showing Veterans Enrolled in Centerstone CCBHCs by state. Florida: Centerstone 3.8%, State × 8.5%. Illinois: Centerstone 4.4%, State × 5.7%. Indiana: Centerstone 6.8%, State × 7.4%. Tennessee: Centerstone 6.2%, State × 8.2%. National = 7.1%.

*State data collected from Drillinger et al. (2020). National data was collected from the United States Census Bureau (2020)

Among CCBHC clients, 5% (n=236) at baseline indicated they have served in the Armed Forces, the Reserves, or the National Guard. Of the 236 clients reporting service, 31.9% (n=74) have been deployed to a combat zone, and 9% (n=21) were currently serving on active duty. Although Veterans are considered a special population that require particular attention by CCBHCs, the low number of Veteran clients among the four CCBHCs indicates a process issue may exist

internally which funnels Veteran clients to separate non-CCBHC treatment pathways. For instance, at the Tennessee CCBHC located in Clarksville, Veterans have been found to receive free care at the Centerstone - Steven A. Cohen Military Family Clinic and therefore are less likely to seek care at the Harriett Cohn Center. In Florida, veterans were found to receive care at Bradenton VA Community Outpatient Clinic located within 5 miles of CCBHC FL's location.

Veteran Status (n=1,452)
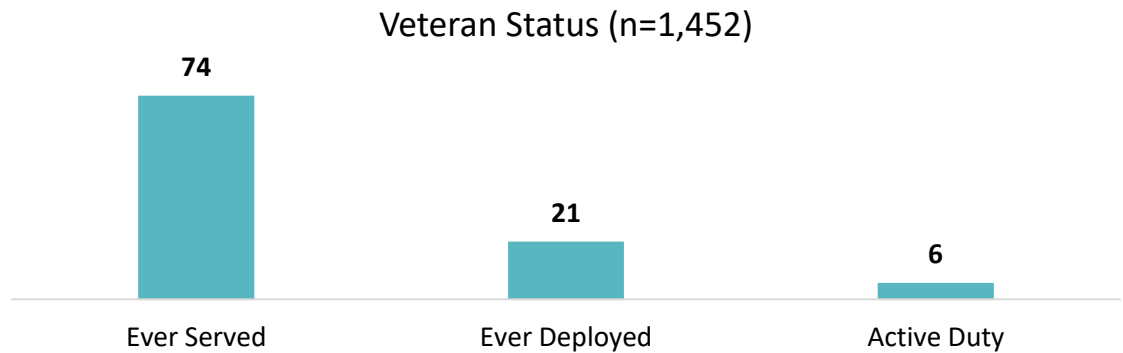
Recommendations: Special Populations
- Emphasize peer and social support and improve cultural competency to address treatment gaps and reduced engagement for LGBTQ+ and populations experiencing homelessness
- Ensure consistent and comprehensive recording of gender and sexual identities in EHR system for all states
- Further explore and understand processes funneling Veteran clients to separate non-CCBHC treatment pathways

Social Factors

Employment

In the general population, the rate of unemployment is 5.1%. For those with a mental illness, it is 6.4% (SAMHSA, 2019). When living with a mental health or substance use disorder, maintaining employment can be particularly difficult. In 2021, 76% of people reported symptoms of a mental health problem in the past year (59% in 2019), and 50% of people had left their job (both voluntarily and involuntarily) in the past year for a mental health reason (34% in 2019; Greenwood & Anas, 2021). Prior to the pandemic, employees at all hierarchal levels were equally susceptible to mental health issues, but more recent data suggests executives and higher level employees are now more vulnerable. Nearly 85% of participants indicated that at least one workplace factor had a detrimental effect on their mental health (Greenwood & Anas, 2021).

Employment Among CCBHC clients at baseline (n=4,430)
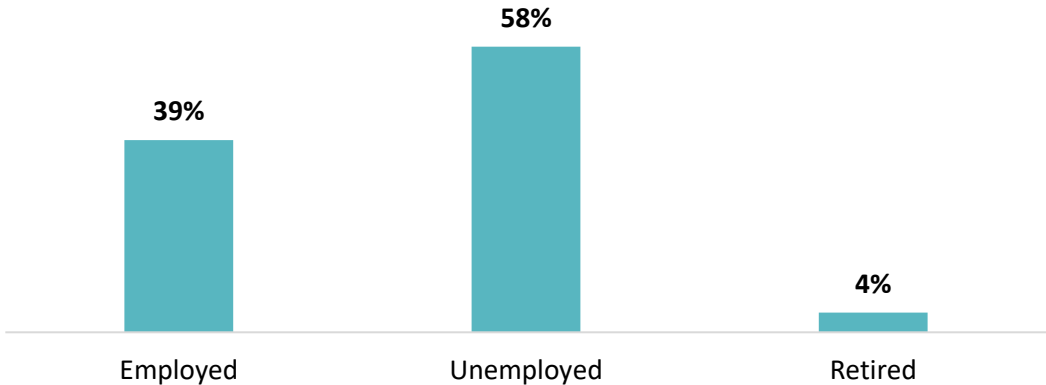
According to the Americans with Disabilities Act National Network, 61.7% of US adults without a disability work full time versus 38.1% of adults with a psychiatric disability and 19.1% for those with any disability (Harris et al., 2019). Nearly 30% of workers with a disability were employed part time compared to 16% of those without a disability (US Bureau of Labor, 2022). Factors associated with success in the workplace for those with psychiatric disabilities include a supportive work environment and flexibility. Persons receiving Social Security

disability income and those without a trauma diagnosis were also more likely to remain working (Russinova et al., 2018).

At baseline, the majority of CCBHC clients reported unemployment (58%), whereas 39% of clients had some form of full-time or part-time employment. Most unemployed clients reported a disability (36%) hindering them from employment, whereas 33% were actively seeking work. The high rates of disability among CCBHC clients seeking behavioral health care supports findings from previous literature (Cree et al., 2020).

Unemployment Status (n=2,395)

32.9% — Looking for Work
30.9% — Not Looking for work
36.2% — Disabled
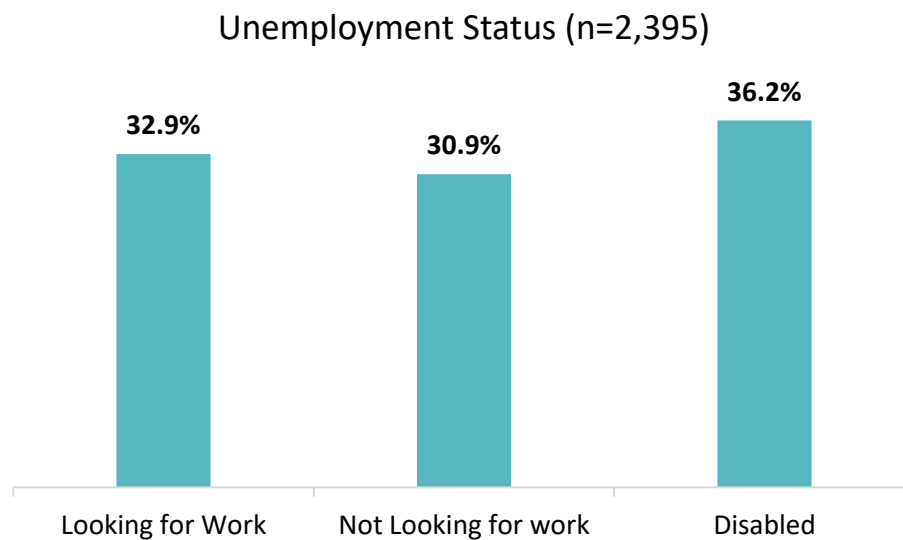
Housing

Finding a place to live can be difficult for those with behavioral health issues as they often have lower income and may not have stable employment. It is even more difficult when the nature of one's illness keeps them from achieving independence. Among CCBHC clients, the majority of clients reported living in a personally owned or rented residence (60%; n=2,650) in the past 30 days, whereas a little over a quarter of individuals lived in someone else's home (30%). An estimated 259 (6%) of clients reported homelessness most of the past 30 days. The current housing classification within the NOMs makes it difficult to truly understand housing insecurity or instability. How individuals define these categories and their placement might differ among clients which can skew the overall representation of housing among CCBHC clients. One suggestion is to further investigate other housing measures that can be integrated into the NOMs

and allow for a clearer understanding of whether housing issues are prevalent among this sample.

Housing of CCBHC clients in past 30 days (n=4,413)
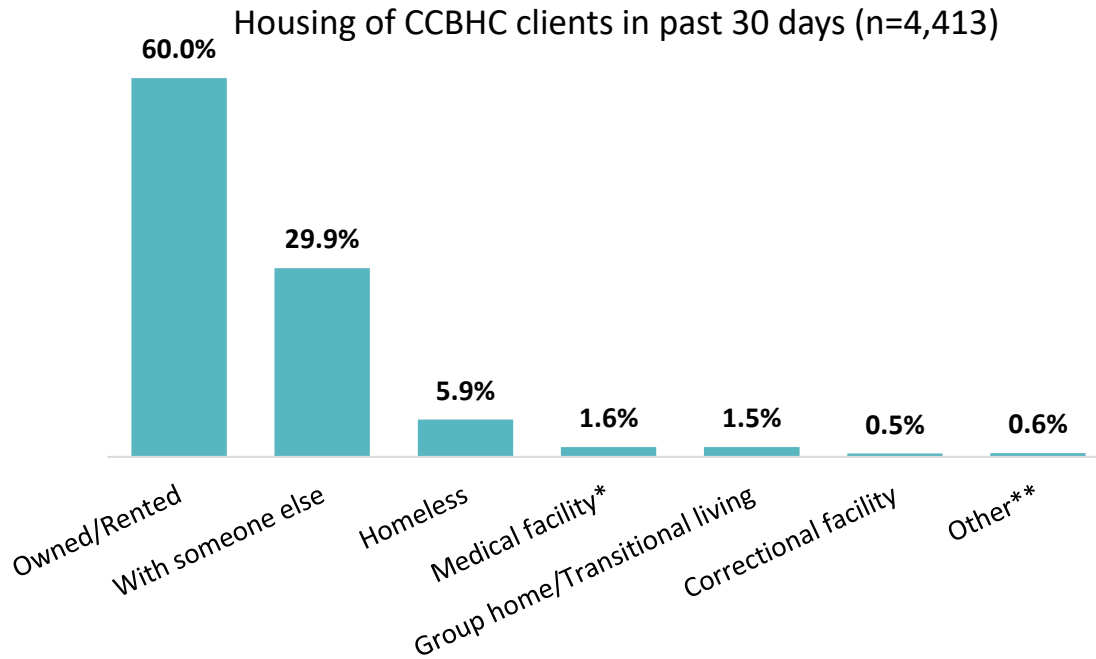
*Includes medical/psychiatric hospitals, detox/SU facilities, and nursing homes
**Eg. Hotel, dormitory

Criminal Justice System Involvement

Two primary purposes of community-based behavioral health treatment for those involved in the criminal justice system is the prevention of antisocial behavior and early intervention (Bonfire et al., 2019). Once an individual is incarcerated, their prognosis devolves as they are subject to the psychological trauma of imprisonment while simultaneously receiving poor medical and behavioral health care. Community-based treatment for those involved in the justice system is just as important to the community as it is to the individual living with a behavioral health disorder.

In order to be effective, community-based providers need to adhere to eight principles (SAMHSA, 2019):

1. Knowledge of the criminal justice system
2. Collaboration with criminal justice professionals
3. Use of evidence-based practices

4. Understand client's risk of future legal problems and address them in the treatment plan
5. Provide integrated behavioral and physical health care
6. Be trauma-informed
7. Provide case management
8. Recognize and address disparities that affect different populations in both the criminal justice system and behavioral health care

In each of the four states, Centerstone works with local courts and community partners to offer services designed specifically for those involved in the criminal justice system. These include re-entry support, transitional housing, employment support, and court diversion programming. Often, when clients enter services with Centerstone in this way they were not connected with CCBHC program staff and are therefore underrepresented in this sample.

The NOMs asks each client how many of the past 30 nights they spent in a correctional facility and how many times they have been arrested in the last 30 days. Consequently, the resulting data on criminal justice system involvement is limited to clients who had very recent contact at the time of interview and may not reflect those who had past involvement, including involvement between interviews.

At baseline, 43 clients (3.0%) reported at least one night spent in jail within the past 30 days, and 30 clients (2.1%) reported at least one arrest in the past 30 days. Of those with jail time at baseline, 98% (n=42) of clients reported nights in jail after six months. However, 7 clients without jail time at baseline reported an average of 6.6 nights in jail at their six month reassessment. Additionally, 93% (n=28) of clients who were arrested in the pays 30 days at baseline reported no arrests after six months.
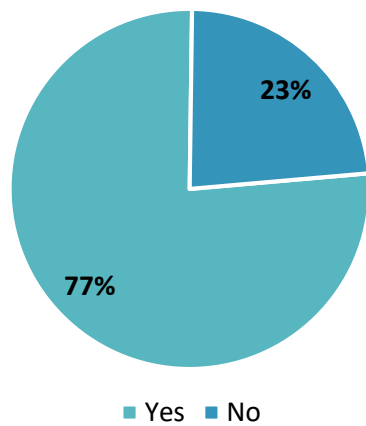
Trauma

Trauma is a widespread public health concern that can impact any one at any age. Trauma is especially common among individuals with mental and substance use disorders (SAMHSA, 2022). Meta analyses investigating the association between childhood trauma and mental health diagnostic categories have found individuals who have experienced childhood trauma and adversity are

2.8 times more likely to develop psychosis (Varese et al., 2012) and 3.6 times more likely to develop a major psychiatric condition (Matheson et al., 2013).

Although the relationship between trauma and health issues is complex, it is evident that trauma experiences are associated with short-term and long-term outcomes such as all-cause mortality, pain, re-injury, increased healthcare service utilization, cardiovascular events, depression, and post-traumatic stress disorder (Garfin et al., 2018). Trauma can also result in variations of illness presentation and progression. For instance, in individuals with the same diagnosis, the first episode of psychosis often looks different in those who have and have not experienced trauma (Dvir et al., 2013).

When CCBHC clients were asked whether they had experienced violence or trauma in any setting including community or school violence, domestic violence, physical, psychological, or sexual maltreatment/assault within or outside of the family, natural disaster, terrorism, neglect, or traumatic grief, 77% (n=3,777) reported yes. Among clients who reported trauma, 174 (5.3%) had been hit, kicked, or slapped in the past 30 days prior to baseline.

Clients Reporting Past Trauma Experiences (n=4,310)

Number of PTSD symptoms experienced (n=3,306)

23%

77%

■ Yes ■ No

5% 4%

7%

13%

71%

■ 0 symptoms ■ 1 symptom ■ 2 symptoms
■ 3 symptoms ■ 4 symptoms
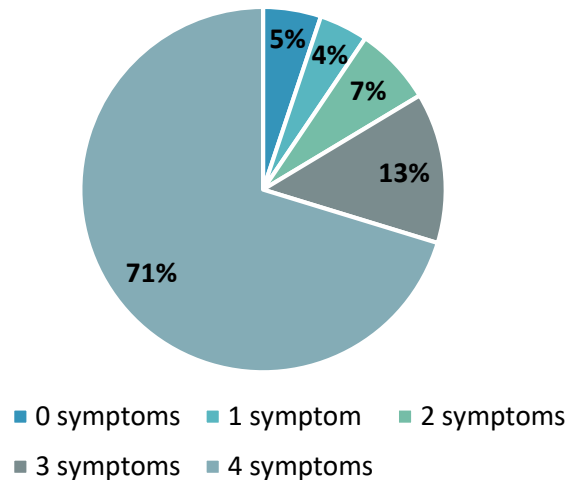
PTSD symptomology in clients reporting trauma (n=3,306)

86%	88%	83%	82%
Re-experiencing	Avoidance	Hyperarousal	Dissassociation
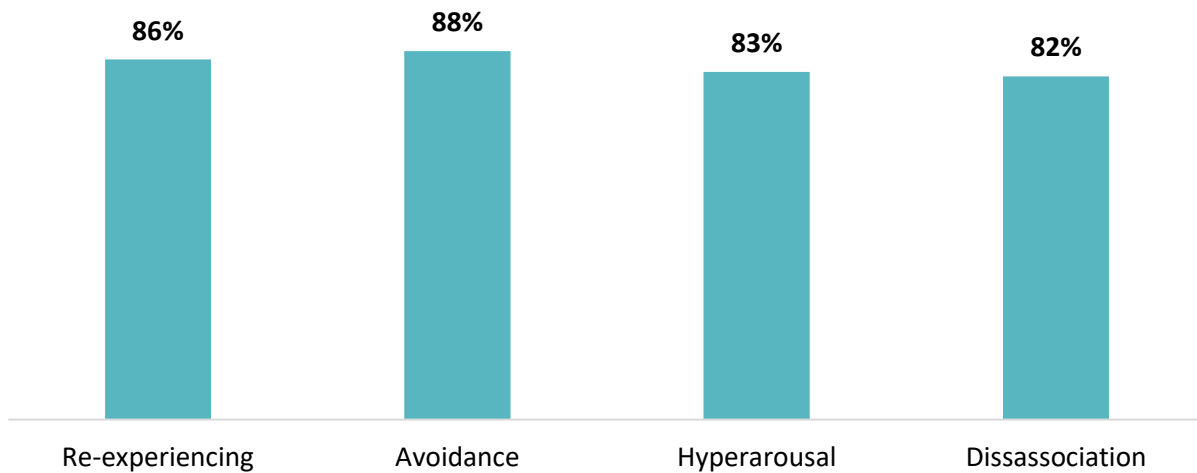
Among clients who identified as LGBTQ+ and responded to trauma-related questions (n=690), 88% reported past-trauma experiences.

Of clients who had at least one day of homelessness in the 30 days prior to their baseline interview, 82% (n=280) of them reported a past trauma and 12.5% (n=43) had also been hit, kicked, or slapped at least once in the past 30 days. Only 4.3% of all clients at baseline reported being hit, kicked, or slapped in the past 30 days (n=185). This indicates those who had experienced recent homelessness had a rate of physical abuse that was nearly three times higher than those who were not homeless.

Due to the widespread nature of trauma and its impact on health and wellbeing, the need to ensure trauma-informed care is ever growing. Trauma informed care involves, "viewing trauma through an ecological and cultural lens and recognizing that context plays a significant role in how individuals perceive and process traumatic events, whether acute or chronic" (SAMHSA, 2014). This approach includes three key elements:

1. realizing the prevalence of trauma
2. recognizing how trauma affects all individuals involved with the program, organization, or system, including its own workforce
3. responding by putting this knowledge into practice

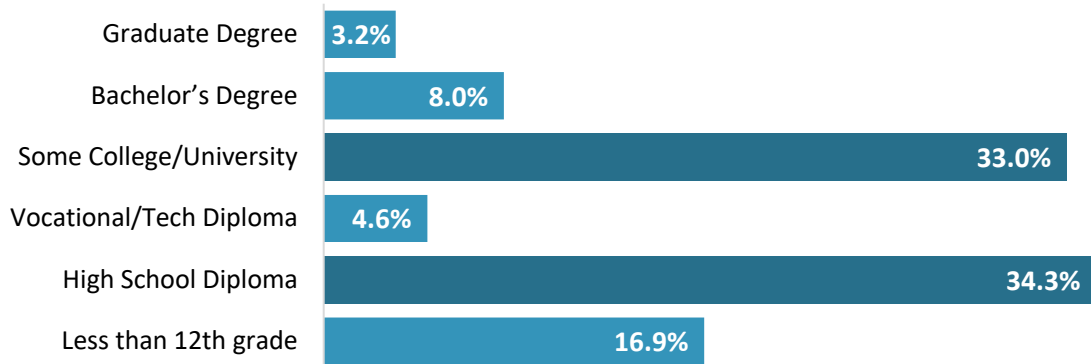By taking a strengths-based service delivery approach, we can create opportunities for survivors to rebuild a sense of control and empowerment. This process also involves vigilance in anticipating and avoiding institutional processes and individual practices that are likely to re-traumatize individuals. With such high rates of trauma among the population served, it is imperative to build a trauma informed infrastructure which includes conscientiously providing trauma-informed care training and monitoring of staff. Further information and discussion are needed with the internal Trauma Informed Care Committee which is dedicated to ensuring staff are adequately trained and competent in trauma-informed services.

Education

Previous literature indicates a correlation between education level, low socioeconomic status (SES), and mental health problems. There are two primary theories about why this relationship exists. The first is the selection model which posits that those who have mental health problems tend to drift downward in SES and therefore, educational attainment. The second is the causation model which suggests that secondary factors associated with low SES result in a greater likelihood of developing mental illness, impeding the ability to consistently pursue higher education (Williams, 2019). Previous literature has found that higher educational attainment was associated with smaller risk of depressive symptoms at age 40 (Cohen et al., 2020). In addition, while educational aspirations during adolescence had no effect on depressive symptoms, those who had lower educational expectations as adolescents were more likely to be depressed (Cohen et al., 2020). This supports the causation model's implication that secondary factors – though not necessarily related to SES – mediate the relationship between education and mental health.

Among CCBHC clients, the majority have at least a high school diploma (34%) or some college education (33%). Of the 751 individuals whose education was less than 12th grade at baseline, 77% (n=575) were older than 25 and 8.1% (n=61) were currently enrolled in school. Slightly less than 13% of CCBHC clients 25 years or older reported having less than a 12th grade education which is only two percent more than the general population (America's Health Rankings, 2021).

Education Level of CCBHC Clients (n=4,434)

| Education Level	Percentage
Graduate Degree	3.2%
Bachelor's Degree	8.0%
Some College/University	33.0%
Vocational/Tech Diploma	4.6%
High School Diploma	34.3%
Less than 12th grade	16.9%

Social Connectedness

Due to the COVID-19 pandemic, loneliness, social connectedness, and their relationship with mental health has been of particular interest. Feeling like we matter to the people we love is directly related to health outcomes. When someone feels as though they do not matter, it increases their psychological burden and decreases their ability to cope (Taylor et al., 2019). For instance, in a case study (Padala et al., 2020) of a nursing home resident with Alzheimer's, dementia, hypertension, hyperlipidemia, and hearing loss, an increase was noted in depression, apathy, anxiety, irritability, difficulty sleeping, and restlessness as a result of visitation by his daughters being suspended due to the pandemic. As an alternative to face-to-face interaction, FaceTime was used to video call with the resident and his family. After a series of sessions, staff reported a decrease in behavioral problems. Social disconnection and feelings of isolation are predictive of increased depression and anxiety symptoms, especially among older people (p<0.0001; Santini et al., 2020). Consequently, older people and those with chronic conditions were at particular risk of worsening mental health symptoms during the height of the pandemic as they became even more isolated. In addition to psychiatric diagnoses, many of Centerstone's clients also have other physical and chronic co-morbidities.

Among baseline interview data, it was found that those above the age of 65 did not report any significant differences in social connectedness compared to those under 65 with the exception of one area. Interestingly, clients over the age of 65 were more likely to agree or strongly agree with the statement "I feel I

belong in my community" (p<.001). Answers to each of the social connectedness questions significantly improved from baseline to 6 months (p<0.001) among all clients.

Percent of CCBHC clients who Agree or Strongly Agree (n=1,432)
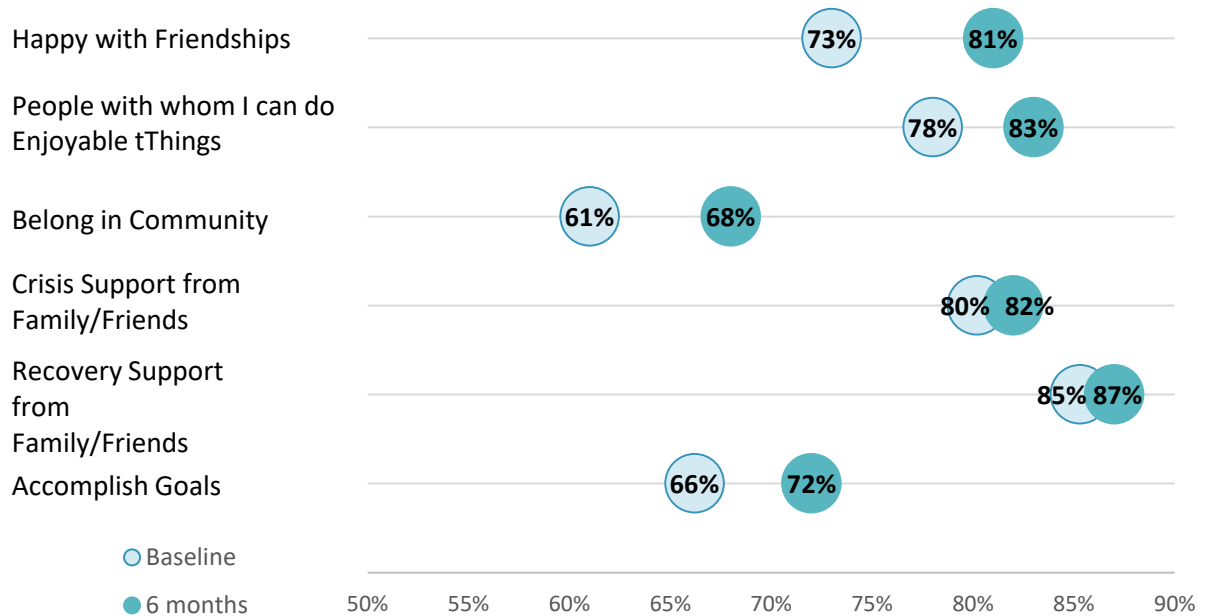
Recommendations: Social Factors
- Standardize tracking and reporting of specific support services related to employment, education, housing, and other social factors
- Investigate potential housing and criminal justice assessments in addition to the NOMs to increase knowledge of prevalent housing concerns and criminal justice involvement among populations served
- Address underrepresentation of justice-involved clients in CCBHC programs
- Enhance trauma-informed care infrastructure including training and monitoring of staff to deal with high trauma rates, particularly for special populations
  - Consult and collaborate with internal Trauma Informed Care Committee

Integrating Physical Health Care

Health Indicators

The NOMs asks clients general health questions which provides information about self-reported health and quality of life. Among clients who reported poor overall health at baseline (n=729), 42% reported statistically significant improvements at 6-months. Quality of life also improved for 45% of clients reporting poor quality of life at baseline (n=679).

42%
of clients who reported fair/poor overall health at baseline improved at 6 months (n=303)

45%
of clients who reported poor/very poor life quality at baseline improved at 6 months (n=303)

Screenings

Screenings are essential for identifying at risk individuals and providing them with the appropriate level of care and treatment options. Several different validated screening tools are available for use within the EHR. Through conversations with project directors, it was evident that screenings administered to clients varied by CCBHC location as well as by provider and circumstance. Based on the information gathered, PHQ-9s are the most widely administered screening. Other specific screenings are administered either by the discretion of the provider or are included in pre-designated intake packets.

Illinois is required by the state to complete an Integrated Assessment and Treatment Planning service at intake which identifies clients' needs and strengths leading to clearly documented treatment recommendations (Illinois Department of Healthcare and Family Services, n.d.). Florida completes a biopsychosocial assessment on all clients which allows a therapist to better understand the biological, psychological, and social factors that can be contributing to problems experienced by the client. Indiana completes an Adult Needs and Strengths Assessment which aims to reflect the needs and strengths/resources of an individual to develop individual care plans, monitor outcomes, and address

behavioral health challenges (Praed Foundation, 2015). Tennessee provides intake packets for clients to complete. This packet includes different screening measures such as the PHQ-9, DAST, and AUDIT.

Types of screening tools utilized:

- Patient Health Questionnare-9 (PHQ-9)
- Alcohol Use Disorders Identification Test (AUDIT)
- Drug Abuse Screening Test (DAST-10)
- Generalized Anxiety Disorder 7-item (GAD-7)
- Columbia-Suicide Severity Rating Scale (C-SSRS)

Vitals

SAMHSA requires CCBHCs to collect five particular vital measurements from clients. This includes blood pressure (systolic and diastolic), weight, height, and waist circumference. Amid the pandemic, in person collection of this data was not possible in some circumstances, and therefore some vitals might be self-reported and subject to recall bias. Vitals were collected quarterly until November 30, 2021 when CMHS grantees reporting any physical health data were advised to report on a biannual basis instead of quarterly.

Utilizing the height and weight data collected, Body Mass Index (BMI) values were calculated for clients in each state. Indiana had the highest proportion (34%) of clients in the optimal BMI range. Tennessee was found to have the highest proportion of underweight clients (7%), in addition to clients with obesity (BMI>30; 55%). Although weight is not something that is directly addressed by our CCBHCs, it is essential to understand clients' relationship with weight and how their weight might impact their physical and mental health. Creating relationships with organizations that address maintaining healthy lifestyles and have opportunities to improve physical activity and diet would be beneficial for our client population.

Baseline BMI Status by State

	Illinois (n=1177)	Indiana (n=1032)	Florida (n=555)	Tennessee (n=347)
Underweight (<18.5)	5%	4%	2%	7%
Optimal (18.5-24.9)	26%	34%	30%	21%
Overweight (25-29.9)	27%	25%	29%	16%
Obese (30-39.9)	29%	25%	30%	31%
Extremely Obese (>40)	13%	11%	10%	24%
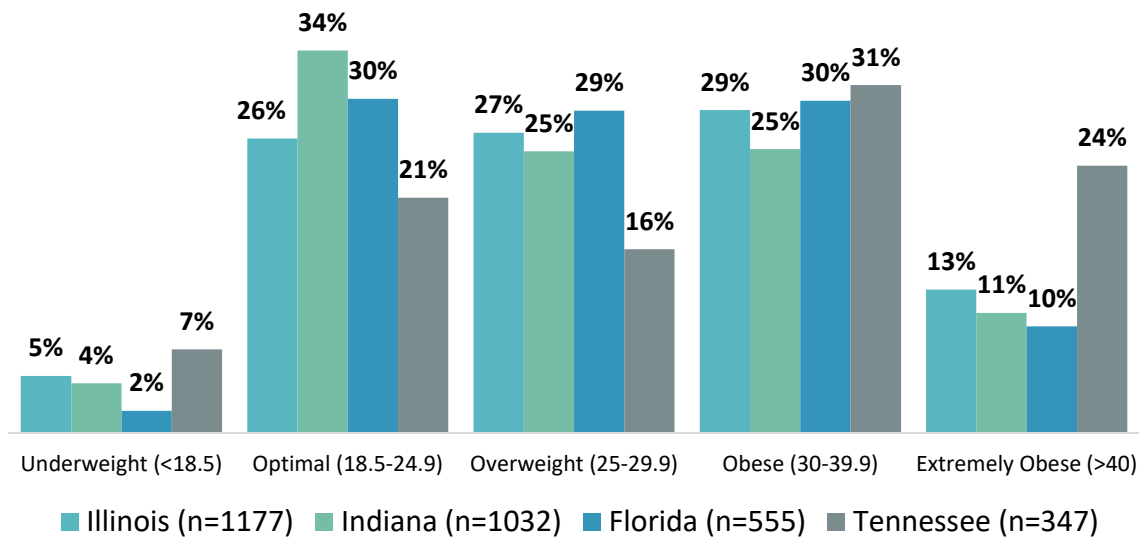
Tennessee, unlike other CCBHCs, also collects blood samples from clients in order to screen for metabolic syndromes and cardiovascular risks. While this additional sample collection and analysis is a non-billable service, it has become an integral part of monitoring the physical health outcomes of clients. For instance, excessive abdominal fat places clients at greater risk for developing obesity-related conditions such as Type 2 Diabetes, high blood pressure, and coronary artery disease (CDC, 2020). Below we see how waist circumference data can be used to understand the prevalence of hypertension amongst clients. Non pregnant women with waist circumferences more than 35 inches were found to have higher rates of pre-hypertension and hypertension.

Waist Circumference Compared to Blood Pressure by Gender

■ Male (n=597)   ■ Female (n=711)

Optimal Waist Circumference

- Optimal: 20% / 21%
- Prehypertension: 27% / 15%
- Hypertension: 20% / 5%
- Hypertensive Crisis: 1% / 0%

At Risk Waist Circumference

- Optimal: 4% / 15%
- Prehypertension: 14% / 22%
- Hypertension: 13% / 20%
- Hypertensive Crisis: 1% / 1%
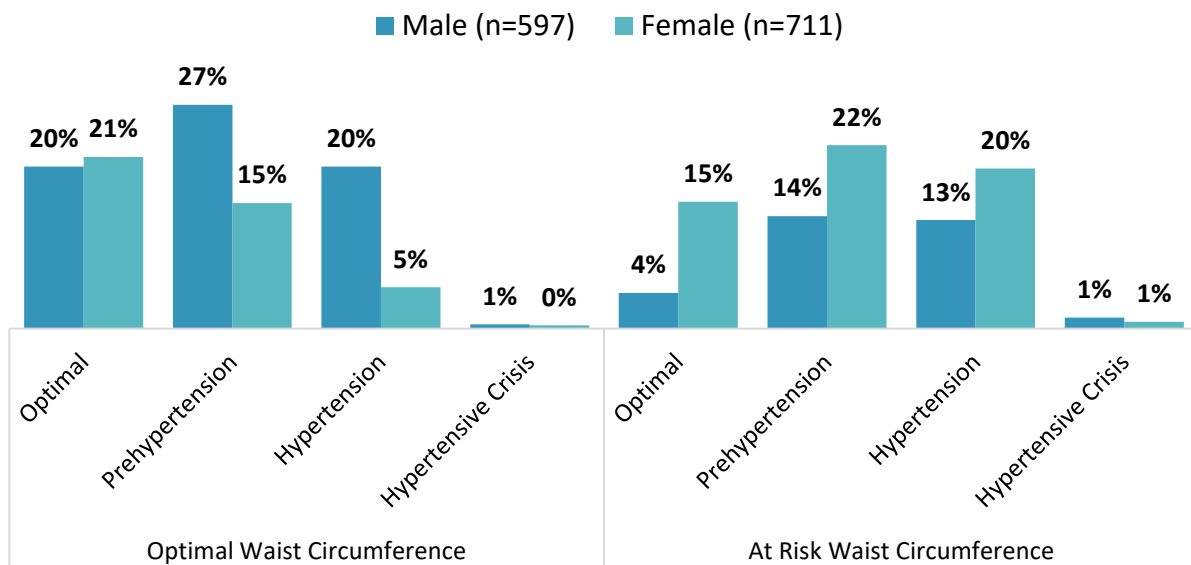
Primary Care Physician Visits

General Health Integration Collaborative

Using data collected from the General Health Integration (GHI) Collaborative led by the National Council, both Tennessee and Indiana have compiled data related to the number of clients who have had a primary care visit during 2021.

In Tennessee, 51% of clients (n=349) reported having a primary care physician. In Indiana, GHI data indicated only 8% of clients (n=455) had a documented PCP visit. In contrast, during 2022, the evaluation team added the following question to the NOMs: Do you have a Primary Care doctor? As of April 6, 2022, 73% of clients (n=145) have responded yes. Even though clients might have an identified PCP, data indicates they have not actively visited that physician in the past year.

Medical Services.

In addition to the GHI data collected for the collaborative, all CCBHCs work to provide some form of medical care to their clients. This includes vitals, referrals to other primary care clinics, lab samples, injectable medications, health coaching, and screenings for metabolic syndrome and cardiovascular risks. Using services

received data from the 6-month reassessment NOMs, 886 clients were found to have received medical care during their treatment at a Centerstone CCBHC. This provision of medical care is likely to be underreported as tracking issues have been identified among research staff. Most of the 886 clients were from Tennessee, Indiana, and Illinois whereas only 4 clients were identified in Florida. This is due to inconsistencies in how each clinic reports services received by clients as well as how service codes are categorized by each RA. Currently we are working with the analytics team to develop a more streamlined and standardized process to ensure data accuracy in the future.

Recommendations: Integrating Physical Health Care
- Optimize physical health screenings and further explore variance across clinics, different providers, and individual circumstances
- Establish and build upon relationships with organizations addressing physical health issues and promoting healthy lifestyles (e.g. physical activity and diet) in which vital metrics indicate will benefit the populations served
- Improve and standardize tracking of primary care utilization and medical services
- Continue collaborating with the analytics team to streamline reporting of services received, reduce inconsistencies, and guarantee accuracy

Perceptions of Care

Understanding clients experiences while in treatment is essential to quality improvement. The NOMs asks a series of staff-related and client-specific questions every 6 months while in treatment. On a Likert Scale of 1 to 5, clients reported agreement with all but one statement at an average score of 4 or higher. At six months, the lowest averages were in the following areas: staff told me what side effects to watch out for (4.06), I was encouraged to use consumer-run programs (3.98), and I, not staff, decide my treatment goals (4.07).

Perceptions of Care: Staff Related Experiences (n=1,417)
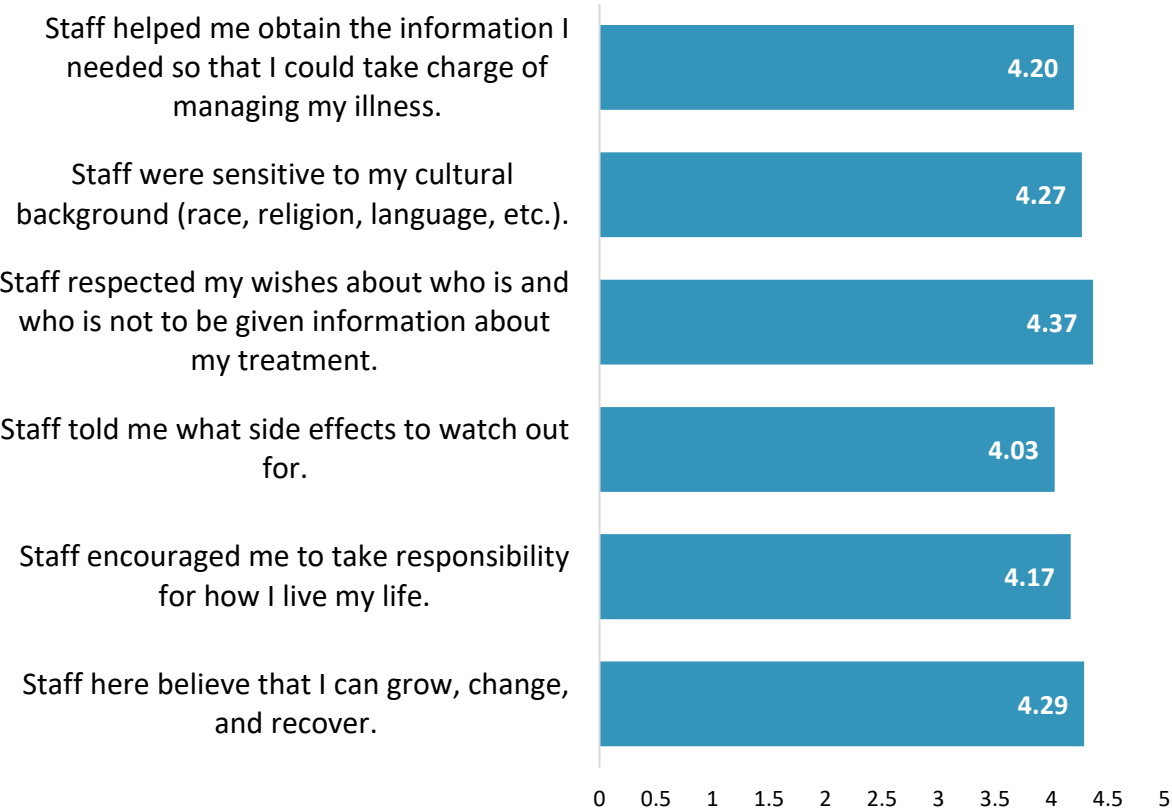
After 6 months of services, 93% (n = 1,316) clients would recommend Centerstone to others.

⭐⭐⭐⭐⭐

4.3 out of 5

"I like the fact that there's a **team of people**, not just one-on-one services. Wellness programs, case manager, mental health services are **all in one place**." **– CCBHC TN Client**

"Felt like I was able to come to **my own conclusions about goals**, didn't feel like I was being guided by someone else's perception." **- CCBHC IL Client**

"The ability to relate to the doctor, he makes me **feel not alone**, he's easy to talk to. Pharmacy is great." **– CCBHC FL Client**

"It was probably the **most simple mental health** experience I've ever had."

– CCBHC IN Client

Perceptions of Care at 6-months: Client-Specific Experiences
(n=1,417)

Statement	Value
I would recommend this agency to a friend or family member.	4.32
If I had other choices, I would still get services from this agency.	4.23
I like the services I received here.	4.32
I, not staff, decided my treatment goals.	4.08
I felt comfortable asking questions about my treatment and medication.	4.30
I was encouraged to use consumer-run programs (support groups, drop-in centers,…	4.02
I was given information about my rights.	4.18
I felt free to complain.	4.18

0   0.5   1   1.5   2   2.5   3   3.5   4   4.5   5

Recommendations: Perceptions of Care
- Continue disseminating perception of care feedback to inform clinical and program efficacy and promote positive client experiences

Reducing Hospital Utilization

Among individuals with behavioral health disorders, high utilization of emergency departments (ED) and hospitals as well as hospital readmissions are of major concern. From 2017 to 2019, the rate of ED visits among adults with mental illness was 52.9 per 1,000 adults (Santo et al., 2021). Depressive disorders were the second most common diagnosis during an ED visit for those between the ages of 0-44 (HCUP, 2018). Individuals with mental illness were also found to have longer ED visits (4 hours or more) and higher rates of hospital admission (8.7% vs 5.7%; Santo et al., 2021). Uninsured rates were similar among individuals with and without mental illness (11.4%). However, fewer clients with mental illness used private insurance (22.9%) than those without (28.8%; Santo et al., 2021). A study on Medicaid beneficiaries found that those with a serious mental illness were 1.43 times more likely and those with another mental illness were 1.21 times more likely to be readmitted to the hospital after 30 days. Comparatively, individuals using outpatient mental health services were half as likely to be readmitted (Cook et al., 2021), indicating the importance of outpatient care for mental health treatment. In 2017, behavioral health ED visits reflected more than $5.6 billion in costs (Karaca & Moore, 2020).

The NOMs survey asks clients about their hospital utilization, both inpatient and ED, in the past 30 days. Therefore, caution must be taken when assessing six-month reassessment utilization changes as these results only pertain to their 5th month in care, not the totality of time between their baseline and reassessment. At baseline, 310 clients (7%) reported having spent at least one of the past 30 nights in a hospital for mental health care. Of these clients, 32% (n=100) completed a 6-month reassessment, 81 of whom indicated zero days hospitalized in the last 30 days. Seventeen clients who had not been hospitalized for mental health care at baseline reported an average of 8.5 days in the hospital at their 6-month reassessment. In terms of ED utilization, 305 clients (6.9%) reported an ED visit at least once in the past month at baseline. Of these clients, 25% (n=77) were still receiving services at six months post-baseline and 99% (n=76) reported no ER

visits in the last 30 days. Sixteen clients who had not visited the ER at baseline reported an average of 3 visits at six months.

> **Recommendations: Reducing Hospital Utilization**
> - o Explore and potentially implement methods for tracking hospital utilization outside of NOMs' specified time frame
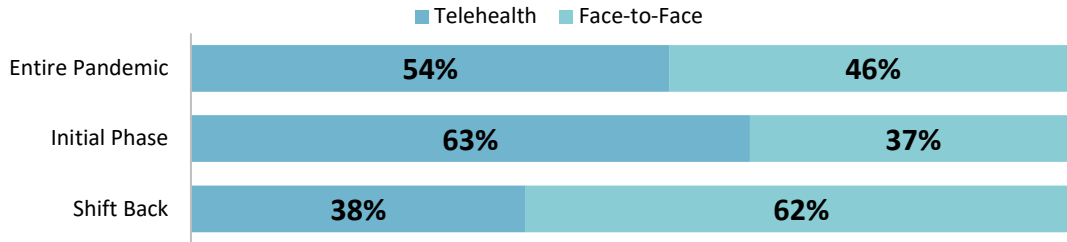
Expanding Telemental Health

With the general population experiencing fear, uncertainty, financial insecurity, and isolation as a consequence of the pandemic, individuals were more likely to encounter feelings of anger, hopelessness, anxiety, depression, and trauma-related stress, especially those with pre-existing mental health conditions (Salari et al., 2020; Brooks et al., 2020). A temporary lift on restrictions in terms of CMS reimbursement, prescription regulations, and licensure requirements allowed for an abrupt implementation of telemental health services to meet the populations' growing needs (Whaibeh et al., 2020). Before the pandemic, adoption and implementation of telemental health was slow due to barriers such as privacy, safety, rapport, and technology limitations from a client's perspective as well as financial, legal, credentialing, and training issues from a clinician's perspective (Cowan et al., 2019). However, the pandemic led to a rapid adoption of this technology across all healthcare sectors.

Service Delivery Methods

Service delivery data provided below was collected from the entire Centerstone enterprise. Three time points are included: 3/16/2020-6/9/2021 (working virtually), 6/10/2021-3/31/2022 (transition back to face-to-face delivery), and 3/16/2020-3/31/2022 (entire pandemic period). Residential and inpatient services continued to be provided face-to-face throughout the entire two years of the pandemic, and therefore the service data below does not include these service types.

Since the initiation of the pandemic in March 2020, over 2,266,000 services (54%) were delivered virtually (via phone or video) with 46% being delivered face-to-face as of March 31, 2022. During the virtual work phase (March 16, 2020 to June 9, 2021), 63% of services were provided via telehealth compared to 37% completed face-to-face. After the transition back to in-person work (June 10, 2021 to March 31, 2022), telehealth service delivery decreased to 38% compared to face-to-face service delivery which increased to 62%.

TOTAL TELEHEALTH VS FACE-TO-FACE BY TIME PERIOD

■ Telehealth ■ Face-to-Face

Time Period	Telehealth	Face-to-Face
Entire Pandemic	54%	46%
Initial Phase	63%	37%
Shift Back	38%	62%

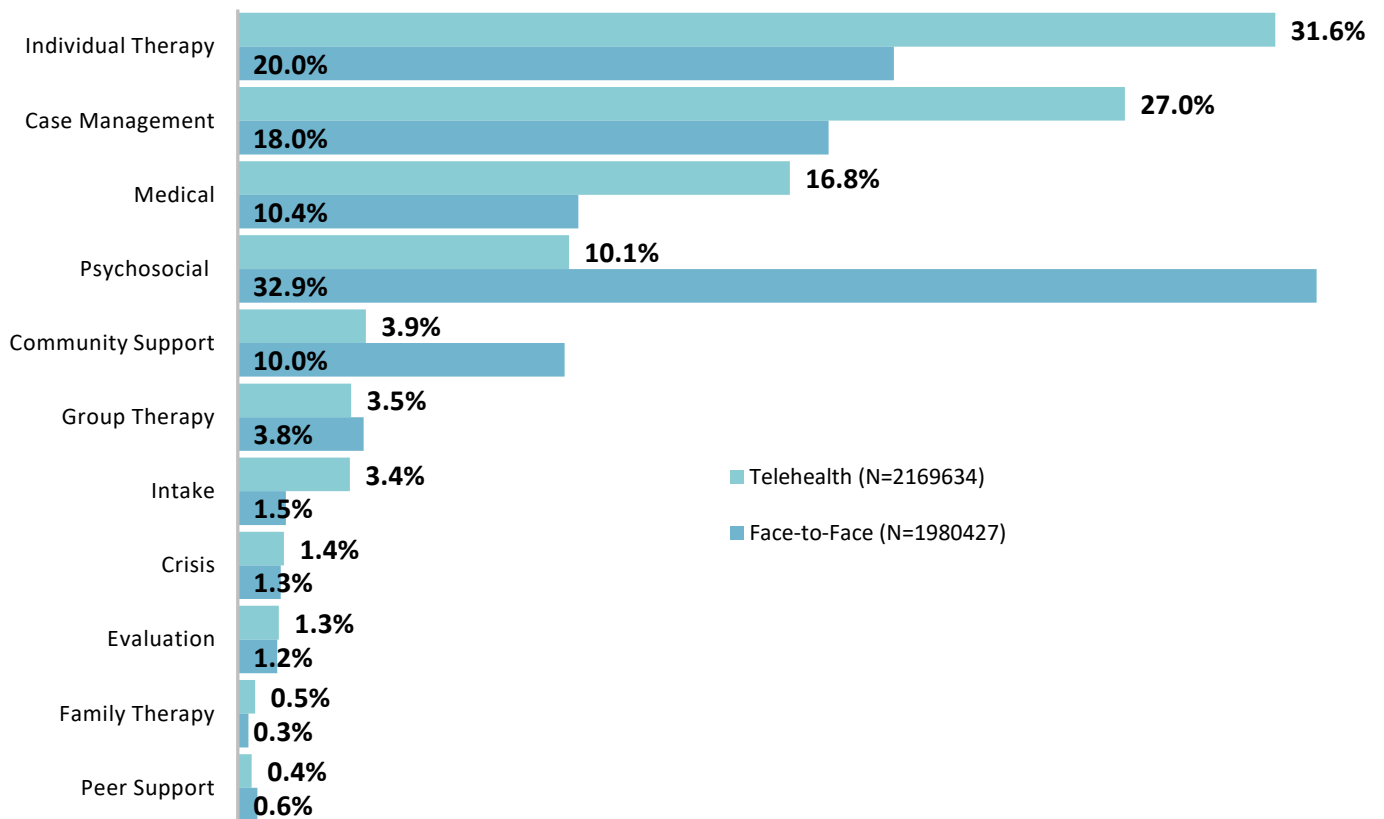When comparing telehealth to face-to-face services across the four CCBHCs, Tennessee and Illinois delivered approximately two-thirds of their services via telehealth during the entirety of the pandemic (March 16, 2020-March 31, 2022), while Florida and Indiana delivered 49% and 43%, respectively. In the initial phase of virtual work (March 16, 2020-June, 9 2021), Tennessee had the highest percentage of services delivered virtually at 78% followed by Illinois, Florida and Indiana trailing at 68%, 52%, and 54%, respectively. After the shift back to in-person work in June 2021, Illinois provided the most services via telehealth at 59% with Florida and Tennessee providing 44% and 41% respectively. Indiana only delivered 24% by telephone or televideo in this time period.

TELEHEALTH VS FACE TO FACE BY STATE

■ Telehealth ■ Face-to-Face

| State	Entire Pandemic		Initial Phase		Shift Back	
	Telehealth	Face-to-Face	Telehealth	Face-to-Face	Telehealth	Face-to-Face
Tennessee	65%	35%	78%	22%	41%	59%
Illinois	65%	35%	68%	32%	59%	41%
Indiana	43%	57%	54%	46%	24%	76%
Florida	49%	51%	52%	48%	44%	56%
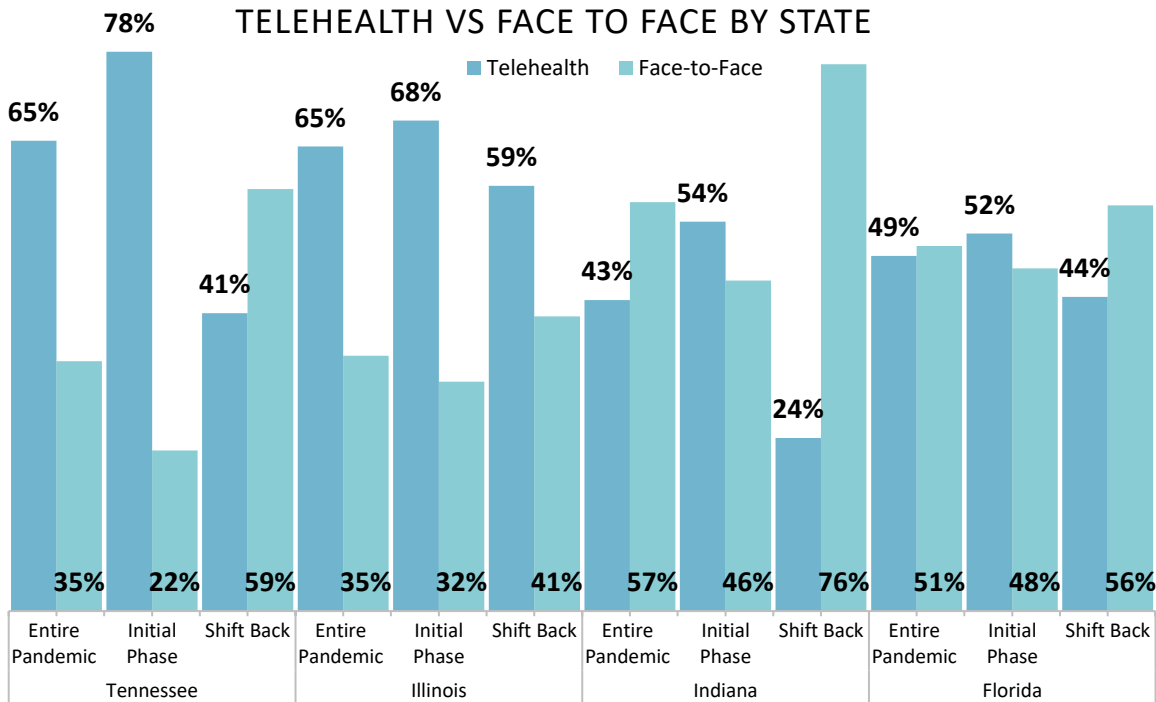
Between the beginning of the pandemic in March 2020 and the most recent data collected as of March 31, 2022, the top five service types provided face-to-face were psychosocial support, individual therapy, case management, medical (psychiatric evaluations and medication visits), and community support, respectively, which make up over 90% of total face-to-face services. The top five services provided via telehealth were individual therapy, case management, medical, psychosocial support, and community support, respectively, which encompasses almost 90% of total telehealth services. The percentages of individual therapy, case management, medical, and intake services were all higher for the virtual methods (telephone or televideo) compared to face-to-face care delivery.

TYPES OF SERVICES PROVIDED FROM 3/1/2020 TO 3/31/2022

Individual Therapy — Telehealth: 31.6%, Face-to-Face: 20.0%
Case Management — Telehealth: 27.0%, Face-to-Face: 18.0%
Medical — Telehealth: 16.8%, Face-to-Face: 10.4%
Psychosocial — Telehealth: 10.1%, Face-to-Face: 32.9%
Community Support — Telehealth: 3.9%, Face-to-Face: 10.0%
Group Therapy — Telehealth: 3.5%, Face-to-Face: 3.8%
Intake — Telehealth: 3.4%, Face-to-Face: 1.5%
Crisis — Telehealth: 1.4%, Face-to-Face: 1.3%
Evaluation — Telehealth: 1.3%, Face-to-Face: 1.2%
Family Therapy — Telehealth: 0.5%, Face-to-Face: 0.3%
Peer Support — Telehealth: 0.4%, Face-to-Face: 0.6%

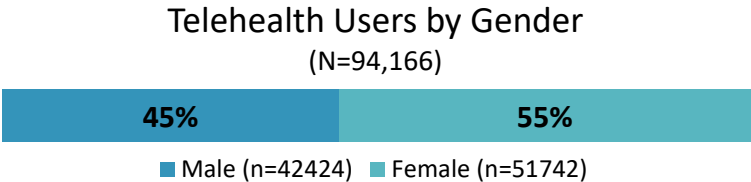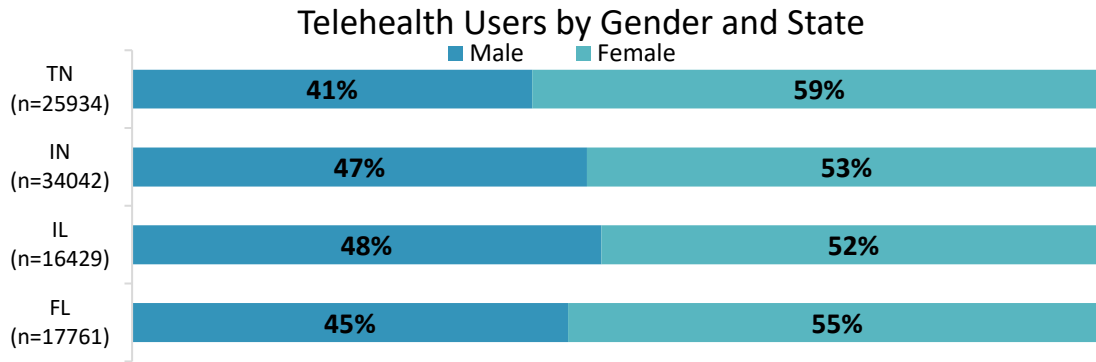Telehealth (N=2169634)
Face-to-Face (N=1980427)

Demographics of Telehealth Users

Considering the extent of telehealth usage throughout the pandemic, it's imperative to understand the demographics of those accessing telemental health services. Age, gender, race, and ethnicity information were compiled for all Centerstone clients as well as for clients tracked through the CCBHC data collection process. All demographic areas showed similar trends in both populations aside from ethnicity. Out of 92,372 clients who used telehealth after implementation, the largest age demographic served were clients younger than 18 years-old (n=27,039) making up almost one-third of all telehealth users. The next two highest age ranges are 25-34 years-old (n=16,851) and 35-44 years-old (n=14,279) with adults 18-44 years-old accounting for about 46% of all telehealth users. The age breakdown for each state showed identical trends.
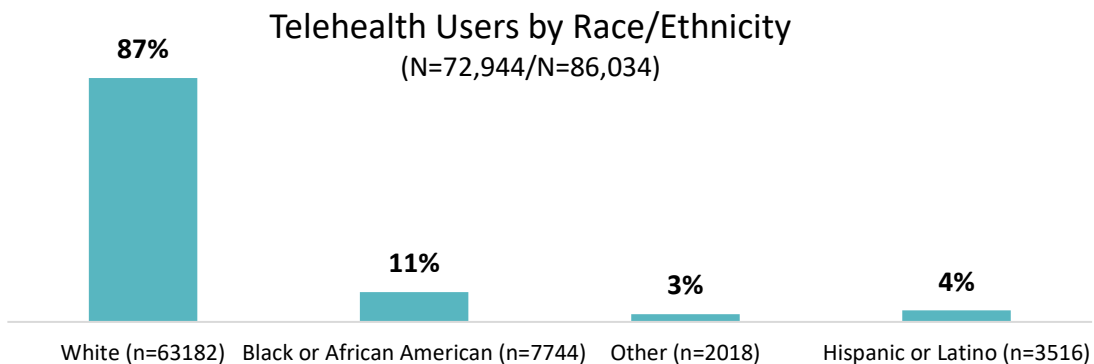
Telehealth User Age Distribution
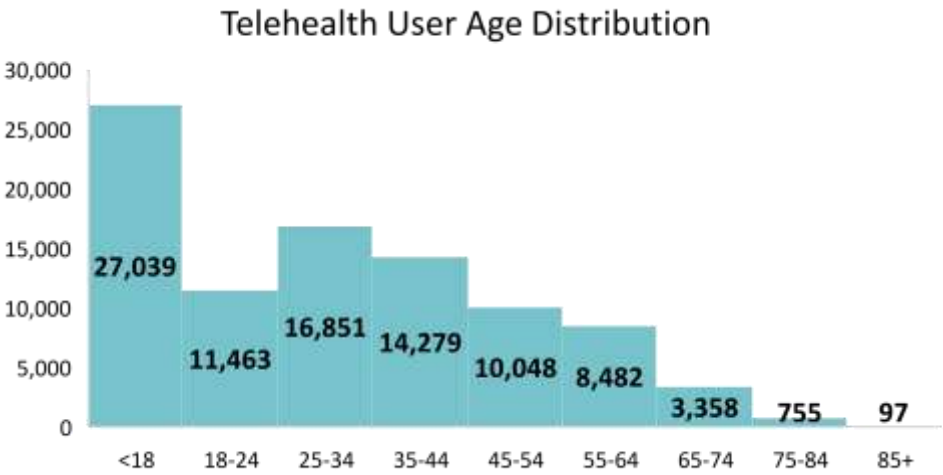
As for gender distribution among 94,166 telehealth users, female clients were the majority at about 55% (n=51,742) compared to males at 45% (n=42,424). Across all four states, female clients were the most predominant users with the proportion being the same for Florida, higher for Tennessee (59%), and lower for both Indiana and Illinois at 53% and 52%, respectively.
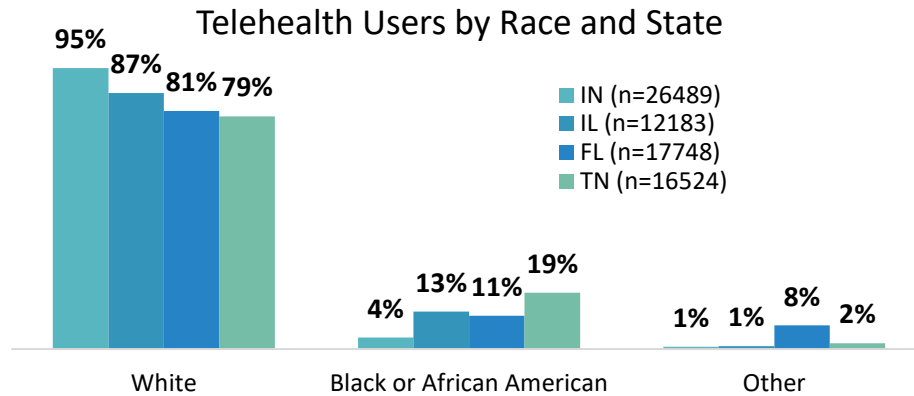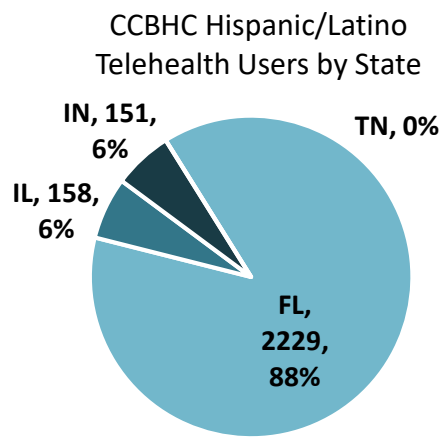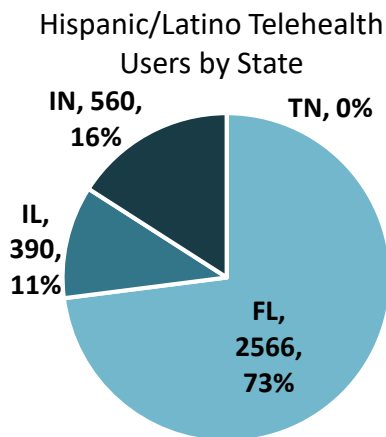
Telehealth Users by Gender
(N=94,166)

| 45% | 55% |

■ Male (n=42424) ■ Female (n=51742)

Telehealth Users by Gender and State

Male ■ Female ■

	Male	Female
TN (n=25934)	41%	59%
IN (n=34042)	47%	53%
IL (n=16429)	48%	52%
FL (n=17761)	45%	55%

Before discussing the racial demographic breakdown, it is important to note that over 15,000 clients had responses of "unknown" and were excluded from analysis resulting in a sample size of 72,944. Eighty-seven percent of clients (n=63,182) identified as white race, while 11% identified as black or African American (n=7,744). The 3% of clients (n=2,018) identifying as "Other" consisted of American Indian or Alaska Native, Asian, Hawaiian or Pacific Islander, and multiracial. For ethnicity, over 8,000 responses were "unknown" resulting in the inclusion of 86,034 clients. Of this sample, only 4% (n=3,516) identified as Hispanic or Latino.

Telehealth Users by Race/Ethnicity
(N=72,944/N=86,034)

White (n=63182)	Black or African American (n=7744)	Other (n=2018)	Hispanic or Latino (n=3516)
87%	11%	3%	4%

Likewise, the majority of telehealth users in all four states were comprised of white clients with Indiana having the highest rate at 95% (n=25,244) compared to Tennessee with the lowest rate of 79% (n=13,037). Subsequently, Tennessee had the highest rate of telehealth users identifying as black or African American at 19% (n=3,165) followed by Illinois at 13% (n=1,553), Florida at 11% (n=1,995), and Indiana at 4% (n=1,031). Florida had the highest rate of telehealth users identifying as "Other" at 8% (n=1,422).

Telehealth Users by Race and State

IN (n=26489)
IL (n=12183)
FL (n=17748)
TN (n=16524)

White: 95%, 87%, 81%, 79%
Black or African American: 4%, 13%, 11%, 19%
Other: 1%, 1%, 8%, 2%

Out of over 3,500 Hispanic or Latino telehealth users across Centerstone, Florida consisted of the apparent majority at 73% (n=2,566). The other 27% of users encompassed Indiana and Illinois clients (n=560 and n=390, respectively). For CCBHC clients (n=2,538), a similar trend was found with Florida making up 88% of total Hispanic or Latino telehealth users compared to Indiana and Illinois at 6% each. Tennessee represented no Hispanic or Latino telehealth users in either population.

Hispanic/Latino Telehealth Users by State

IN, 560, 16%
TN, 0%
IL, 390, 11%
FL, 2566, 73%

CCBHC Hispanic/Latino Telehealth Users by State

IN, 151, 6%
TN, 0%
IL, 158, 6%
FL, 2229, 88%

Recommendations: Expanding Telemental Health

o Investigate lack of Hispanic or Latino representation particularly in Tennessee
o Ensure comprehensive and systematic collection of demographic (e.g. race and ethnicity) information in EHR system for all states to avoid "unknown" or missing data
o Clarify and standardize processes for reporting service delivery method (i.e. face to face vs televideo vs telephone) in EHR system to allow for more exhaustive analysis of telemental health utilization and improvement opportunities
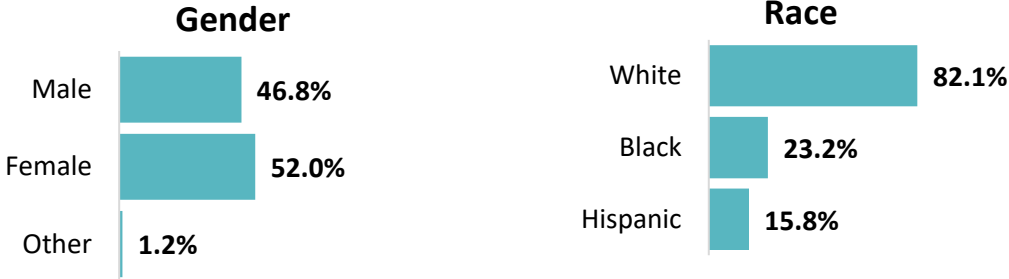
Children

In addition to serving adults, Centerstone also seeks to effectively reach and treat children with mental health and substance use issues. The NOMs utilized for children is different from adults and includes questions about school and reframes certain questions to be more suited for children or their caregivers.
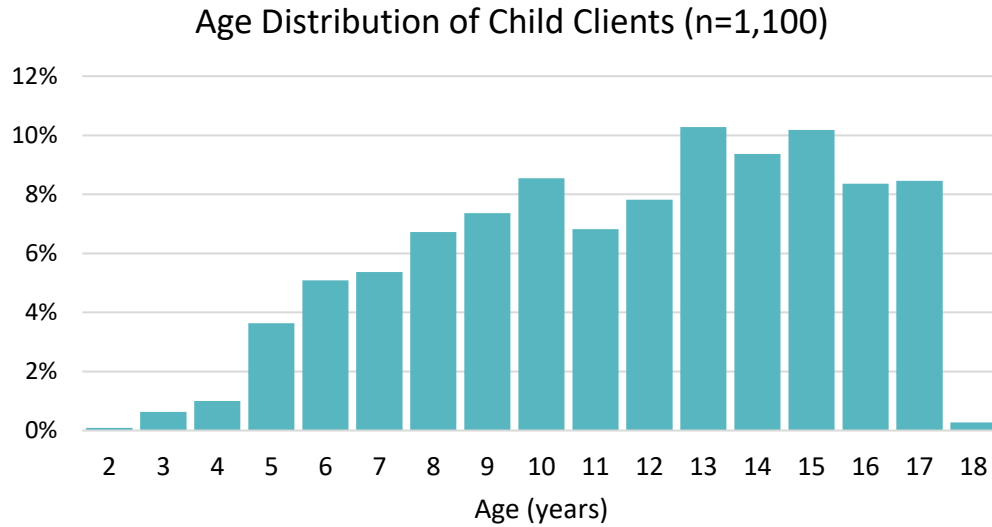
Up to this point, this present report has only discussed data collected from adults (18+). Children (<18 years old at baseline) and/or their caregivers completed 1,100 usable NOMs baselines, equivalent to 17.6% of all CCBHC baselines collected between October 2018 and June 2022.

Most of the baselines (70.5%; n=775) were completed by caregivers. When the child completed their own interview, SAMHSA asked that the child be 10 years of age or older.

Demographics and Social Factors

The proportion of males to females is similar for children and adults. However, there is a larger proportion of children who identified as black or Hispanic than adults.

Gender

Male	46.8%
Female	52.0%
Other	1.2%

Race

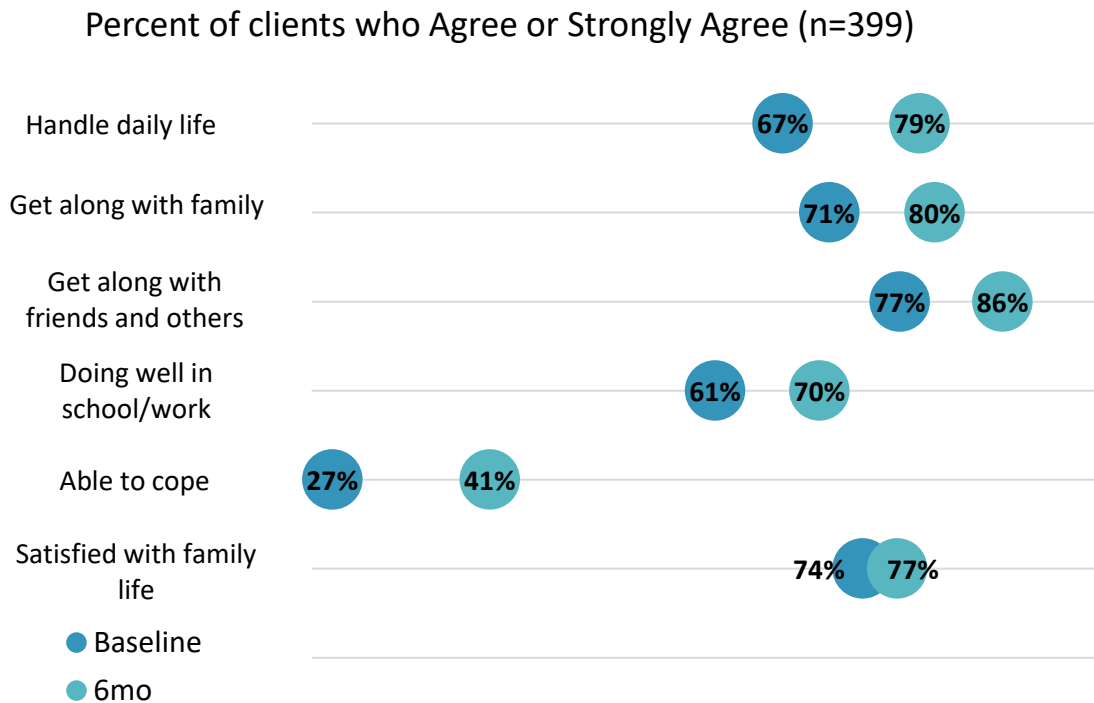|	
White	82.1%
Black	23.2%
Hispanic	15.8%

Age Distribution of Child Clients (n=1,100)

The graph below illustrates the most common primary diagnoses children had according to the data collected in the NOMs. These five categories accounted for 96% of clients. The remaining 4% of clients had primary diagnoses such as emotional and social disorders specific to childhood (n=10), personality disorders (n=10), substance use disorders (n=10), and psychotic disorders (n=8).

Primary Diagnosis (n=1,100)
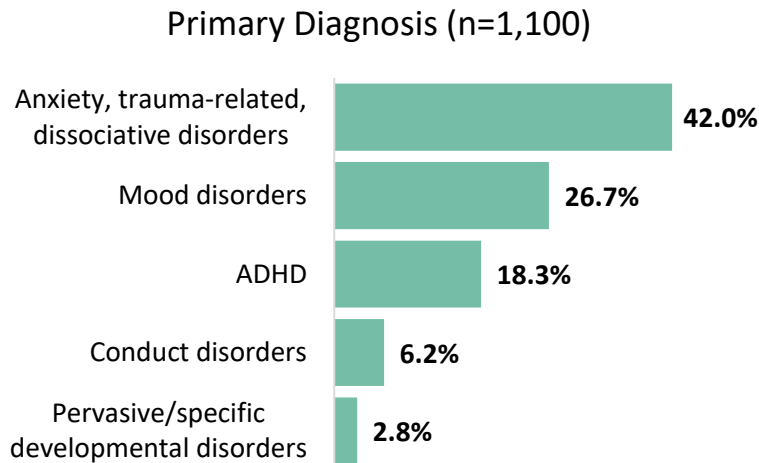
Most clients were reported to be living at home with their caregivers at baseline (93%, n=1015). A minority of clients were homeless (n=5), living in a group home (n=2), therapeutic foster care (n=3), transitional living facility (n=2) or institutionalized (n=6).

Functioning and Mental Health

Clients significantly improved in all areas of functioning from baseline to 6 months. After remaining in treatment for six months, clients reported improved overall health, ability to handle daily life, get along with family and friends, and ability to cope (p<0.001). Respondents also reported client improvements in school or work (p<0.01) and increased satisfaction with their family lives (p<0.02)

Percent of clients who Agree or Strongly Agree (n=399)

	Baseline	6mo
Handle daily life	67%	79%
Get along with family	71%	80%
Get along with friends and others	77%	86%
Doing well in school/work	61%	70%
Able to cope	27%	41%
Satisfied with family life	74%	77%

● Baseline
● 6mo

Mental health symptoms were reported by child respondents only, and most symptoms significantly decreased after six months. Children reported decreased feelings of nervousness, hopelessness, restlessness, depression, and worthlessness (p<0.01).

46%
of clients reported a **decrease** in restless/fidgety feelings (n=30)

42%
of clients reported a **decrease** in hopeless feelings (n=27)

42%
of clients reported a **decrease** in nervous feelings (n=27)
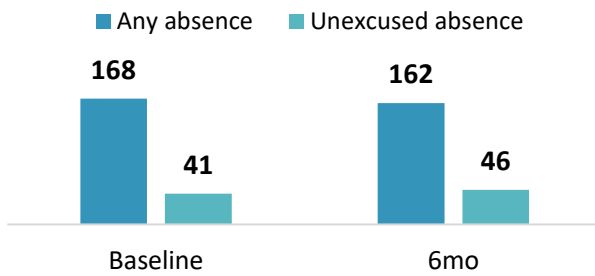
School and Education

A comparison of age to grade level indicated that 5.5% (n=60) children were older than most of their classmates and peers in the same grade level and 6.2% (n=68) were found to be younger than their peers at baseline.
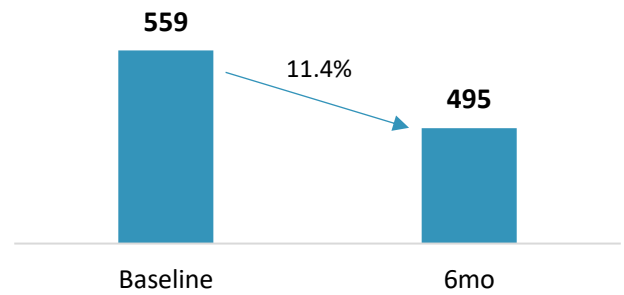
Education Level Distribution (n=1,092)
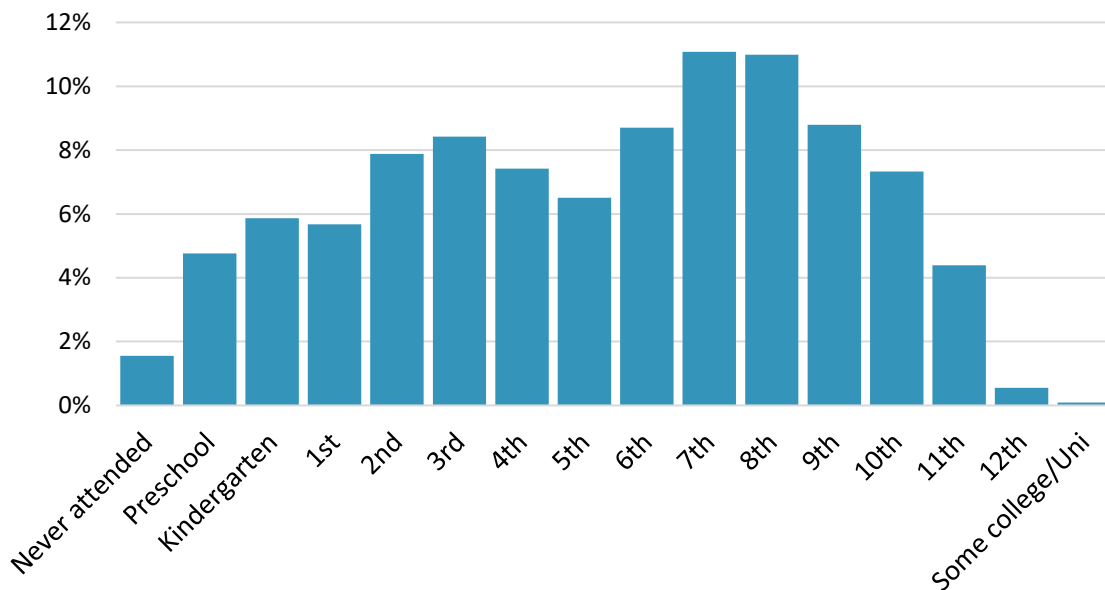
While the number of children who reported absences from school did not change much from baseline to 6 months, there was an 11.4% decrease in the total number of days that clients were absent.

Number of Students with School Absences

Any absence ■ **Unexcused absence** ■

	Baseline	6mo
Any absence	168	162
Unexcused absence	41	46

Total days absent
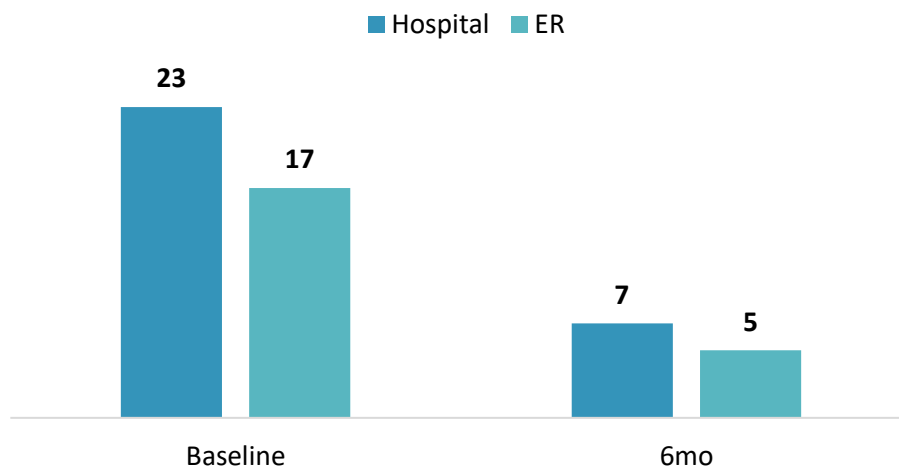
Baseline: 559
6mo: 495
11.4%

Institutionalization

Of all 1,100 baselines, 4% (n=44) of clients had visited the ER at least once in the last 30 days and 6.4% (n=70) had spent at least one night in the hospital for mental health care.

Of clients who completed a 6 month reassessment, 30 had either been hospitalized or gone to the emergency room for a mental health reason in the last 30 days. At 6 months, only 7 clients had used the hospital in the past 30 days, indicating a 76.7% decrease in clients using the hospital for mental health reasons.

Hospital Usage from BL to 6mo

Hospital ■ **ER** ■

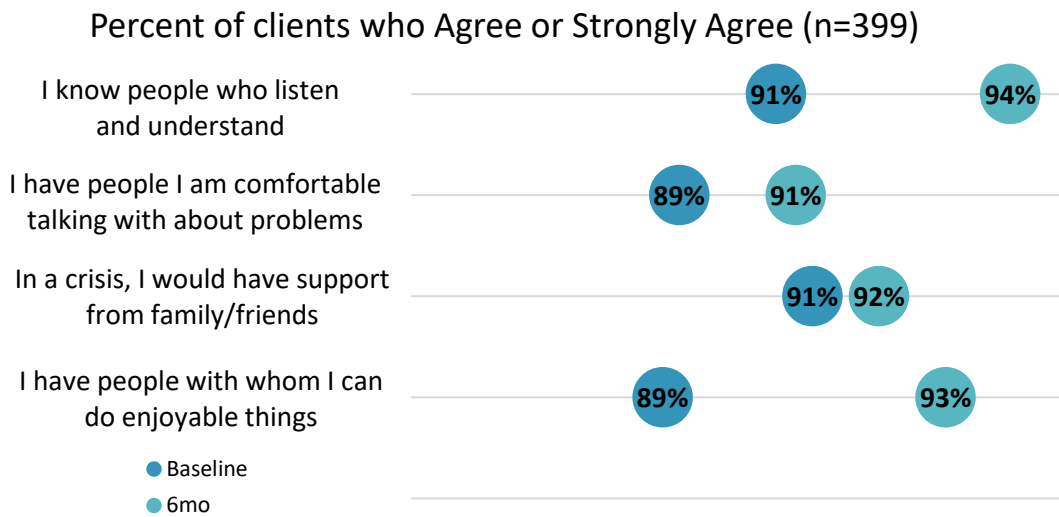|	Baseline	6mo
Hospital	23	7
ER	17	5

At baseline, 6 clients (0.6%) had been arrested at least once and 7 (0.6%) had spent at least one of the past 30 nights in jail.

Of clients who completed 6 month reassessments, 3 clients had been arrested in the last 30 days and one of those three had spent 4 nights in jail. At 6 months, that same client had been arrested again and spent another night in jail in addition to one more client being arrested once.

Social Connectedness

At baseline, the majority of clients responded positively to most measures of social connectedness. However, significant improvements ($p<0.02$) were still found at 6 months.

Percent of clients who Agree or Strongly Agree (n=399)

I know people who listen
and understand — 91% — 94%

I have people I am comfortable
talking with about problems — 89% — 91%

In a crisis, I would have support
from family/friends — 91% 92%

I have people with whom I can
do enjoyable things — 89% — 93%

● Baseline
● 6mo

Perception of Care

At 6 months, the majority of clients and caregivers responded favorably to measures on perception of care.

Perception of Care: Percent of Clients who Agree or Strongly Agree (n=595)

Staff treated me (us) with respect.	97%
Staff respected my family's religious beliefs.	94%
I was spoken to in a way I understood.	98%
Staff were sensitive to my cultural background.	96%
I helped choose my (child's) services.	90%
I helped choose my (child's) treatment goals.	90%
I participated in my (child's) treatment.	92%
I am satisfied with the services I (we) received.	91%
The people helping me (us) stuck with me (us) no...	92%
I felt I (my child) had someone to talk to when I...	88%
The services I (we) received were right for me (us)	89%
I got the help I wanted (for my child)	86%
I got as much help as I needed (for my child)	76%

Sustainability

The CCBHC model has created a systematic change in the way the behavioral health field operates. By emphasizing and investing in integrated care and care coordination among physical health, mental health, and substance use treatment, clinics are pushed to serve clients in a holistic manner. The changes made to adhere to the requirements of this grant were not simple or superficial. The transformation required to adhere to the principles of the CCBHC model require long-term support and constant re-evaluation as the clinics evolve. Federal funding has been a substantial stepping stone in starting this transformative process. Our clinics were able to evaluate what was already being done, and what needs to be added or revised moving forward. Each state is currently in a different phase of sustaining the CCBHC model. Below is a summary of sustainability efforts **as of April 2022**:

Florida's CEO is working with state leadership to determine how to become CCBHC certified and to raise Medicaid reimbursement rates. This clinic has received a no-cost extension for one year and applied for the next grant cycle to continue establishing and sustaining the CCBHC model.

Illinois's CCBHC received a 1 year no-cost extension and did not apply for the next federal grant cycle. Intead they are applying for a state grant next year, but further discussion is needed regarding the requirements and expectations for this state funding. The current expectation is to use this grant as bridge funding.

Indiana is working on infrastructure and sustainability of health coaches and care coordinators. They have a no-cost extension for 6 months. The governor just signed a legislative order to support the CCBHC model. Coalitions are being built and IN's National Council is involved in these discussions for sustainable state funding.

Currently Tennessee has a no-cost extension for 5-months. Key personnel participate in conference presentations and individual meetings with stakeholders (i.e. payers and legislators) to discuss the importance of the CCBHC model.

Recommendations: Sustainability

- o Enhance and promote sharing of differential experiences across the four CCBHC clinics to increase awareness of barriers and facilitators and boost sustainability efforts

Future Directions

Through this cross-site analysis many important lessons have been learned and opportunities have been identified. The following is a list of future directions to ensure cohesion and best-practices are pursued as we move forward with the CCBHC model.

Continue Sustainability Efforts

- Continued efforts are needed to involve state policy makers and ensure future funding for key integrative health services. CCBHC allowed for both the emergence of new services and support and expansion for others. In order to maintain these services in the future, accurate data will be needed to aid in decision making.
- Next steps include development of a tracking and reporting mechanism for non-billable services to ensure clinics can quantitatively show all that they do for clients.

Standardization of Evaluation and Data Collection Across States

- Standardization of data collection processes will allow for simpler and more accurate data comparisons across states.
- By doing so, we can assert findings in a more powerful way both internally and externally for multiple stakeholders.
- Next steps would be to work with research staff, program staff, and analytics to establish similar data collection and reporting processes.
- One important lesson learned and key example of lack of standardization emerged with the PHQ-9 screening data. The lack of consistency and timeliness of this measure made it difficult to illustrate change over time.
- Universal training for RAs/interns/whoever is doing data collection to ensure homogenous data collection

Goals for CCBHC 3.0

- With half of the funding and support for maintenance of the CCBHC model moving forward, there is a clear need to redefine client tracking from SAMHSA reporting purposes.
- Expanding services to marginalized groups or individuals we were unable to reach in the past 2-4 years is essential to ensure improved access to care.
- Strengthening our data consistency and accuracy will improve analysis processes to inform decision making. Can create dashboards to monitor grant progress and key outcomes.

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