



TN

Department of
**Mental Health &
Substance Abuse Services**

East Tennessee Psychiatric Hospital Resources

Research and Review

Tennessee Department of Mental Health & Substance Abuse Services



Executive Summary

On October 18, 2023, the Tennessee Department of Mental Health and Substance Abuse Services received a letter from Lieutenant Governor McNally, Senator Becky Massey, and Senator Richard Briggs requesting the department to conduct a study assessing the need to build a state inpatient psychiatric hospital in Knox County. The department has prepared the following research and information contained in this report both in response to that request and in our ongoing work to monitor resources and report trends in the state's mental health system. In addition to examining the region's need for services and population trends, this report also recounts the department's history of providing such services in the area up to the closure of Lakeshore Mental Health Institute, our inpatient psychiatric services through contracted providers in East Tennessee following the closure of Lakeshore Mental Health Institute, and the reinvestment of operations dollars. The department would like to express gratitude for the many community behavioral health providers and three inpatient psychiatric hospitals which participated in the reinvestment and have improved the lives of countless east Tennesseans through services offered. These organizations include:

- McNabb Center
- Frontier Health
- Ridgeview Behavioral Health
- Cherokee Health Systems
- Mental Health Association of East Tennessee
- Peninsula Hospital (Covenant Health)
- Woodridge Hospital (Ballad Health)

Through this research, several factors emerged which decisionmakers may consider as they weigh the benefit of constructing a new state psychiatric hospital in the Knox County area:

1. The current staffed psychiatric hospital bed capacity in east Tennessee is below research-based standard minimums for the region's population.
2. The region's population is predicted to grow over the next few decades further increasing the need for inpatient psychiatric hospital bed capacity.
3. The private inpatient psychiatric hospital market lacks resources and expertise to provide care for patients with the highest needs and least resources to pay, patients coming from jail, and commitments for court-ordered evaluation. This leaves the state's Regional Mental Health Institutes as the only other option.
4. The distance to the closest Regional Mental Health Institute places a burden on patients disconnecting them from family and other supports which might aid in treatment and increases difficulty for successful aftercare planning and placement.

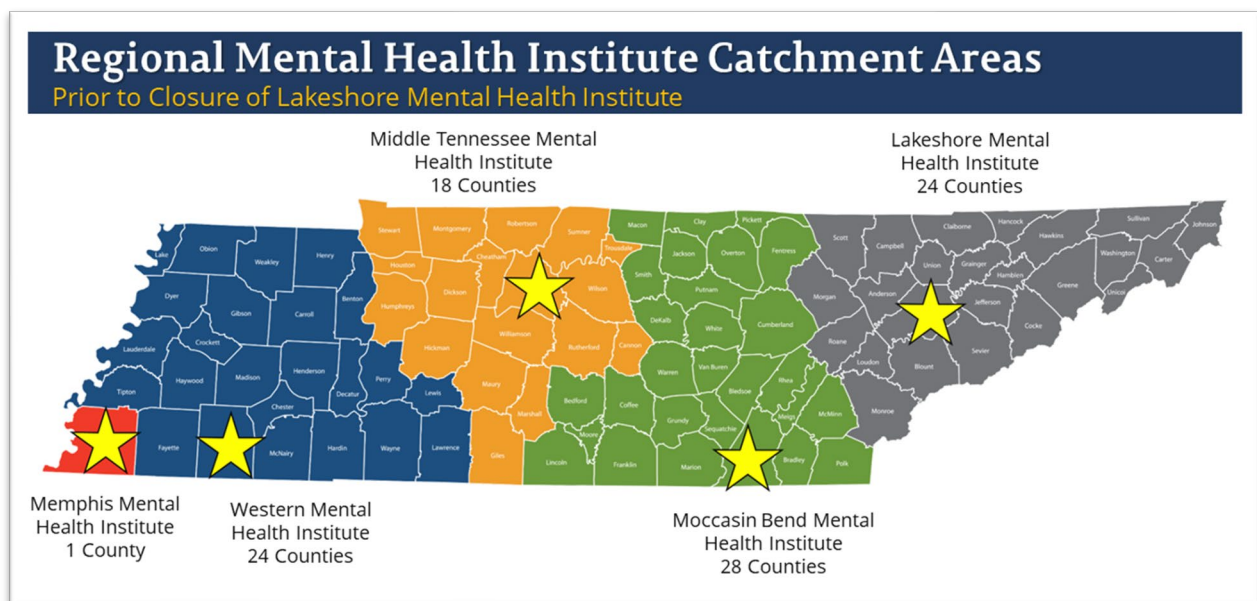
- The distance to the closest Regional Mental Health Institute puts a fiscal and personnel burden on law enforcement who are responsible for transporting patients to a Regional Mental Health Institute in most cases.

As a result of these factors and others which will be examined further in this report, the Tennessee General Assembly and Governor may want to further explore the possibility of constructing a new, state psychiatric hospital in the Knoxville County area with a bed count of up to 100.

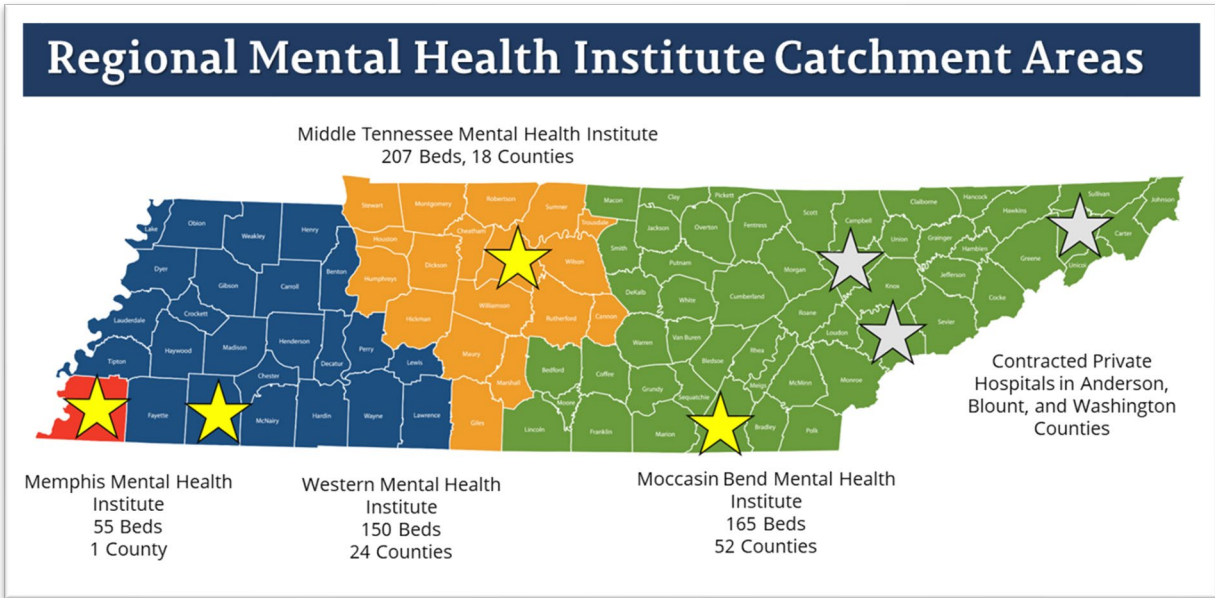
Background

Tennessee's Regional Mental Health Institutes provide a safety net for individuals needing inpatient psychiatric care. At peak capacity, Tennessee operated five Regional Mental Health Institutes, and there are currently four Regional Mental Health Institutes serving the needs of Tennesseans across the state (*see prior and current catchment area maps below and page 4*). In 1832, the Tennessee General Assembly approved the state's first mental health hospital, which was established in 1840. After mental health reform advocate Dorothea Dix called for improved facilities, the new facility later known as Central State Hospital was founded in 1852 in Nashville. Lakeshore Mental Health Institute was Tennessee's second state hospital established in 1886 in Knoxville. Additional state hospitals were established in Bolivar (1889), Chattanooga (1961), and Memphis (1962).

*Regional Mental Health Institute Catchment Areas **Prior to** Lakeshore Mental Health Institute Closure*

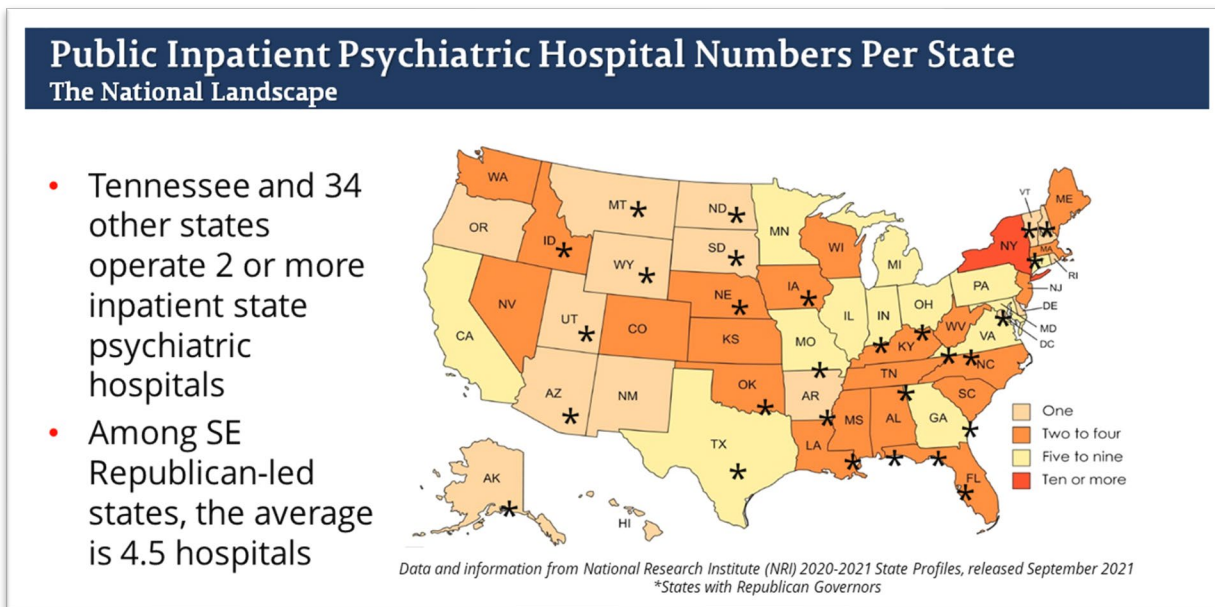


Current Regional Mental Health Institute Catchment Areas Following the Closure of Lakeshore Mental Health Institute



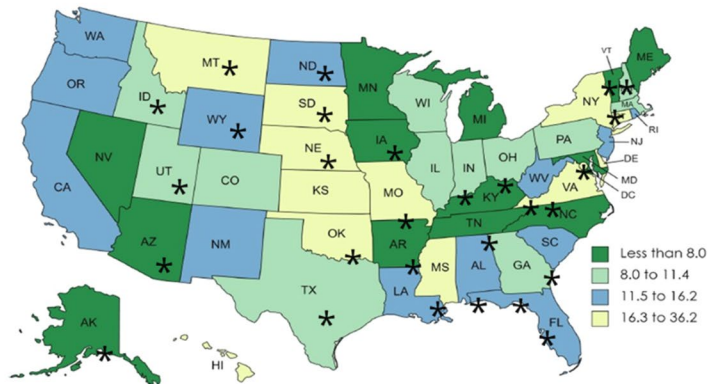
National Landscape

Tennessee and 34 other states operate two or more state psychiatric hospitals. Tennessee is one of 13 states with the lowest public inpatient psychiatric hospitalization rates at eight or fewer per 100,000 of the population (see *National Landscape maps below and page 5*). The availability of robust community resources in Tennessee likely contributes to the lower inpatient psychiatric hospitalization rates.



Public Inpatient Psychiatric Hospitalizations Per Population The National Landscape

- Map represents hospitalizations per 100,000 state population
- Tennessee is one of the 13 states with the lowest state hospitalization rate at 8 or fewer
 - <8: 13 States
 - 8.0-11.4: 12 States
 - 11.5 to 16.2: 13 States
 - 16.3 to 36.2: 13 States
- Among SE Republican-led states, the average is 15.7 hospitalizations per 100,000 population



Data and information from National Research Institute (NRI) 2020 - 2021 State Profiles, released September 2021
*States with Republican Governors

Lakeshore Mental Health Institute

Lakeshore Mental Health Institute, previously located in Knoxville, was a 115-bed state inpatient psychiatric facility with 60 acute and 55 long-term care beds and 375 full-time employees. In 2011, the decision was made to begin planning for the closure of this facility based on a variety of factors including but not limited to: declining average daily census (*see Graph 1, page 6*), a strong community behavioral health provider network, and the presence of strong government and local hospital support/buy-in.

An assessment of the long-term patients hospitalized at Lakeshore Mental Health Institute was conducted, and it was determined that the majority of the remaining patients could be adequately supported in the community. There were several strong community mental health centers in the area¹ that were capable of scaling up services which allowed for the successful placement of patients in the community. Additionally, three private psychiatric hospitals in the region² were willing and able to serve individuals in need of inpatient psychiatric services, and

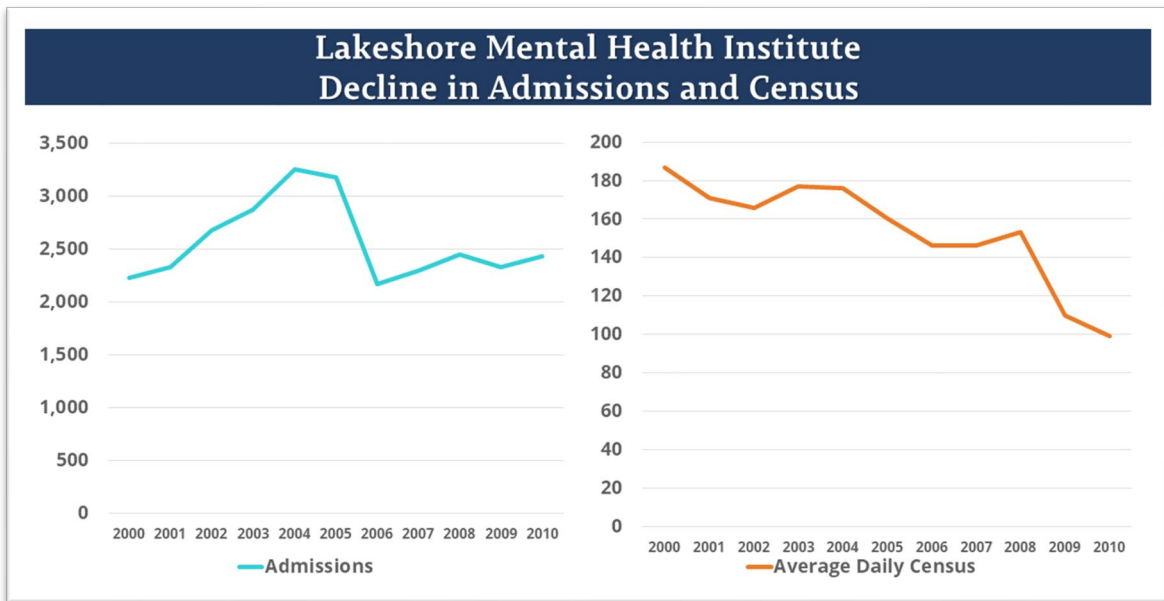
¹ Detailed list in Executive Summary, p. 2

² Peninsula Hospital (Covenant Health), Woodridge Hospital (Ballad Health), and Ridgeview Behavioral Health

the state entered into contracts with them to serve the indigent population just prior to the closure of Lakeshore Mental Health Institute.

During the last full year of operation (FY 2010-2011), Lakeshore Mental Health Institute had a total of 2,237 admissions and 36,322 patient days. The average daily census was 98, and the percentage of admissions with a length of stay less than 10 days was 91%. In April of 2012, the state appropriation was \$20.5M with an average state cost of approximately \$470 per patient day.

Graph 1



Community Behavioral Health Reinvestment

Following the closure of Lakeshore Mental Health Institute, the \$20.5M annual state funding for hospital operations was reinvested in community programs. These investments increased access and availability of the following services and supports through our community provider contracts:

- Crisis Services (Mobile Crisis, Crisis Stabilization Units, Crisis Walk-in Centers and Crisis Respite)
- Behavioral Health Safety Net Services
- School-Based Behavioral Health Liaisons
- Housing Services (Inpatient Targeted Transitional Support and Intensive Long-Term Support)
- Peer Support Centers, Peer Wellness Coaches and a Peer Recovery Call Center
- Medically Monitored Detox Withdrawal Management
- Criminal Justice Liaisons
- Neonatal Abstinence Syndrome Program
- Individual Placement and Support and Supported Employment

These increases led to more Tennesseans receiving community-based services as well as more patients receiving inpatient psychiatric care. During FY 2013, an additional 46,259 Tennesseans were served (total number served, not distinct individuals) with 42,903 served with community-based options, 2,800 served through private inpatient psychiatric contracts, and 556 served at state inpatient psychiatric hospitals. During FY 2023, that number increased to 95,806 with 92,948 served with community-based options, 2,127 served through private inpatient psychiatric contracts, and 731 served at state inpatient psychiatric hospitals (*see Table 1, page 8*).

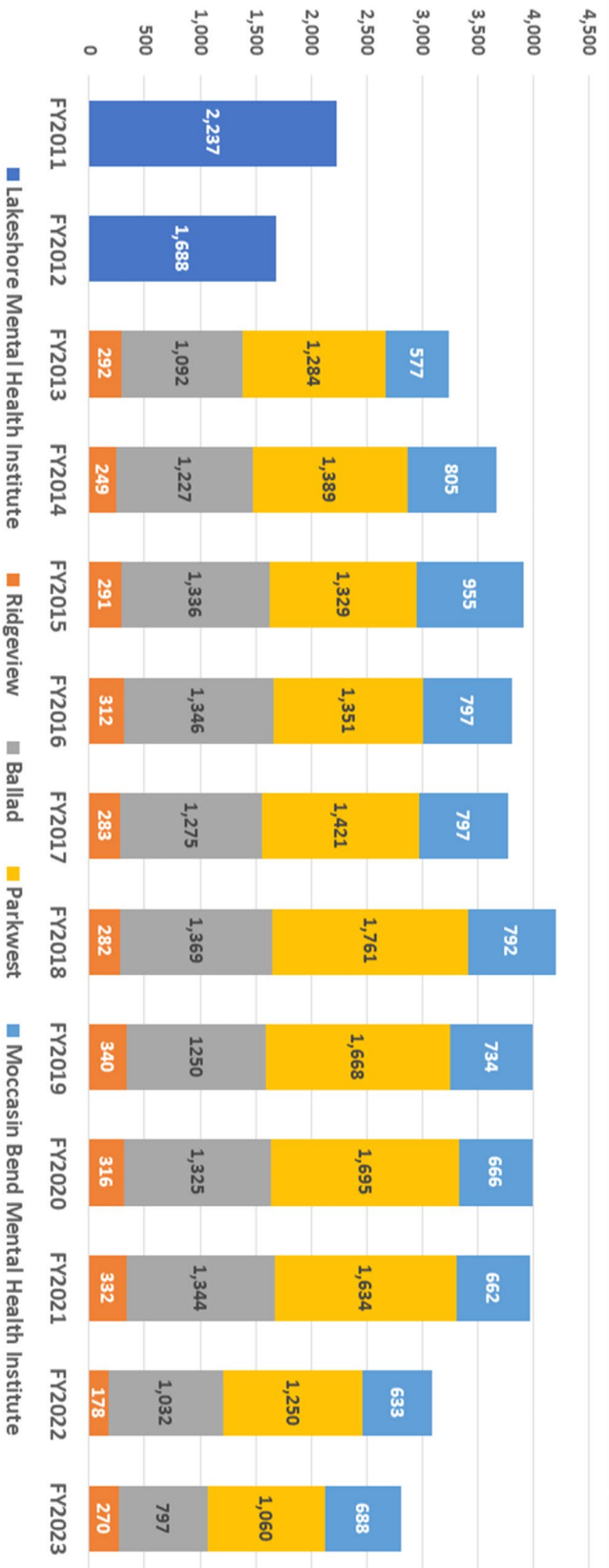
In addition to reinvestments in community-based services, TDMHSAS bolstered inpatient psychiatric capacity with a 25-bed expansion at Moccasin Bend Mental Health Institute and contracted for admissions at three private psychiatric hospitals in the catchment area formerly served by Lakeshore Mental Health Institute. Even with the closure of Lakeshore Mental Health Institute, thousands more Tennesseans from the area formerly served by the hospital received inpatient services in the decade that followed. The following (*Graph 2, page 9*) compares the number of admissions that occurred during Lakeshore Mental Health Institute's last year of operation to the average number of admissions that have occurred across the three private contracted facilities and Moccasin Bend Mental Health Institute since FY 2013.

East Tennessee Behavioral Health Transformation Project FY13-FY23										Allocated Annual Funding from LMHI			
	FY13 # Served (Regions 1 & 2 combined)	FY14 # Served (Regions 1 & 2 combined)	FY15 # Served (Regions 1 & 2 combined)	FY16 # Served (Regions 1 & 2 combined)	FY17 # Served (Regions 1 & 2 combined)	FY18 # Served (Regions 1 & 2 combined)	FY19 # Served (Regions 1 & 2 combined)	FY20 # Served (Regions 1 & 2 combined)	FY21 # Served (Regions 1 & 2 combined)		FY22 # Served (Regions 1 & 2 combined)	FY23 # Served (Regions 1 & 2 combined)	
Crisis Stabilization Unit (CSU)	3,667	4,052	3,930	3,781	3,879	3,865	3,840	3,389	2,333	2,695	2,816	\$2,780,200	
Walk-in Center	3,449	1,965	2,435	2,664	2,879	3,480	3,764	4,452	2,608	3,262	3,015		
Mobile Crisis (Face to Face)	13,786	13,850	13,839	13,959	17,752	16,911	12,108	11,521	12,994	12,027	12,515		
Mobile Crisis (Diversions %)	61%	63%	54%	56%	57%	58%	58%	55%	52%	49%	52%		
RESPTTE	484	893	1,005	820	909	1,281	1,520	2,457	2,720	3,124	3,068		
Crisis Continuum Total													
Regional Mental Health Institute beds to support (Regions 1 & 2 (admissions))	556	790	860	740	805	809	740	694	670	694	731		\$2,603,200
Behavioral Health Safety Net of TN for Adults	14,210	13,282	12,062	10,448	10,393	11,491	12,537	13,944	14,296	12,964	11,731		\$2,305,300
Intensive Long-Term Support	23	38	35	33	33	42	39	34	32	34	34		\$2,007,800
Criminal Justice/Behavioral Health Liaisons	5,062	7,085	9,155	7,398	8,215	8,697	9,268	14,376	14,655	20,763	27,491		\$1,400,000
Medically Monitored Withdrawal Management	785	687	721	690	788	720	753	906	1,681	1,009	957	\$1,200,000	
Peer Support Centers	849	1,589	2,508	4,614	4,864	4,282	4,459	3,805	3,246	3,896	3,991	\$1,100,000	
IPS Supported Employment	n/a	164	143	299	403	376	416	473	536	446	649	\$440,000	
School Based Mental Health Liaisons	n/a	6,504	10,845	8,911	11,016	9,394	13,228	6,836	10,676	16,594	20,006	\$400,000	
Peer Wellness Coaches	n/a	337	531	1,007	801	733	1,013	1,246	1,254	1,082	1,003	\$335,000	
Inpatient Targeted Transitional Neonatal Abstinence Syndrome (N/AS) Program	526	719	329	318	817	472	511	500	523	454	433	\$330,500	
Peer Recovery Call Center	n/a	49	42	49	44	57	78	32	24	4	4	\$155,000	
Peer Recovery Call Center	n/a	6,055	11,455	13,040	7,276	6,340	6,513	8,559	5,334	5,264	5,235	\$75,000	
Contracted Grant Beds													
Peninsula	1,368	1,461	1,435	1,373	1,450	1,812	1,734	1,758	1,665	1,279	1,060	Note: \$1.9M funding prior to addition in FY13	
Ridgeview	298	262	313	311	286	283	342	315	332	178	270		
Woodridge	1,134	1,215	1,386	1,344	1,305	1,389	1,226	1,349	1,360	1,038	797		
Totals - not distinct individuals	46,259	60,139	73,020	71,800	73,916	72,424	74,089	76,646	76,939	86,807	95,806	\$20,523,600	

Total amount paid to hospitals in FY23 call funds - \$6,473,998

Table I

LMHI Admissions Compared to East Tennessee Contracts & MBMHI Admissions from Former LMHI Catchment Area



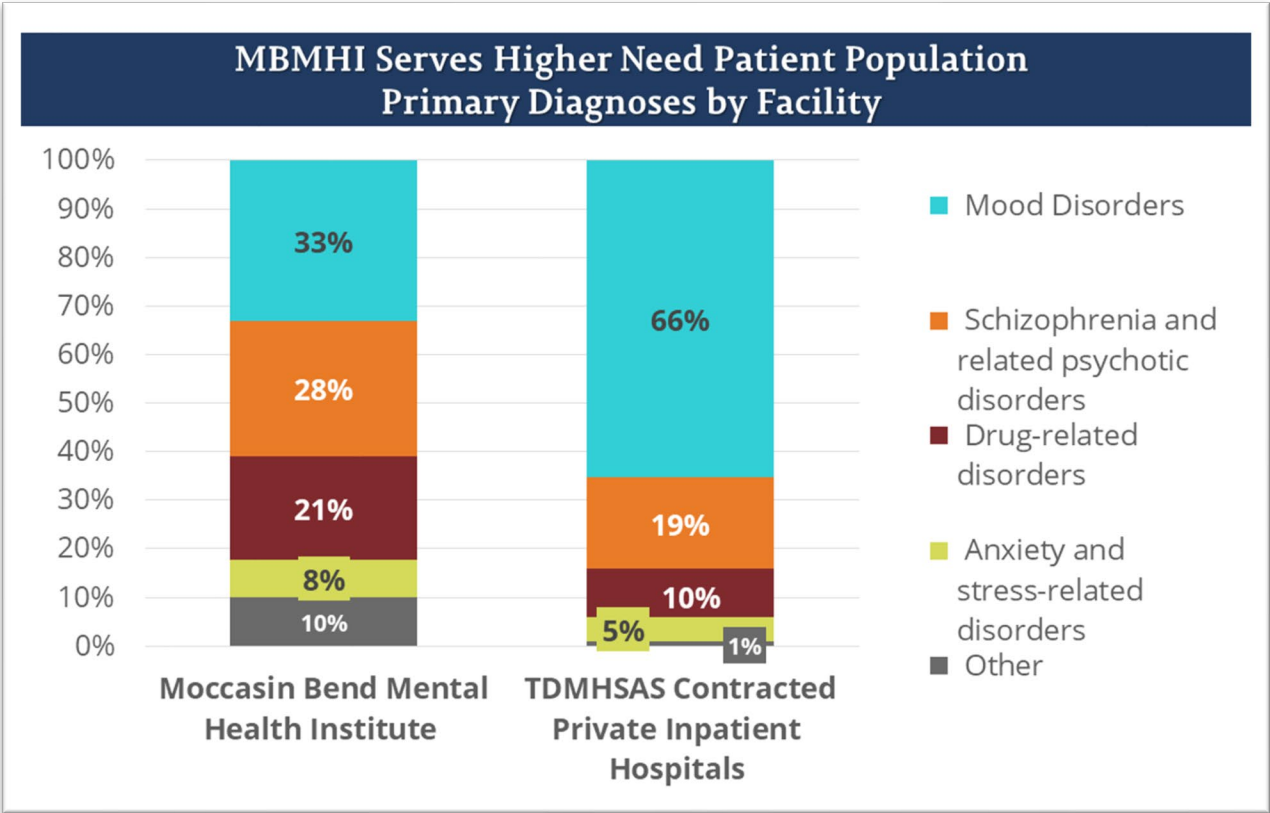
From FY13 – FY23, there has been an average of 3,681 admissions per year to the three state-contracted private facilities and Moccasin Bend Mental Health Institute (combined) from the former Lakeshore Mental Health Institute catchment area. Please note that represents a **65% increase in admissions to state-owned or state-contracted facilities from the former Lakeshore Mental Health Institute catchment area since FY11.*

Graph 2

Needs Assessment

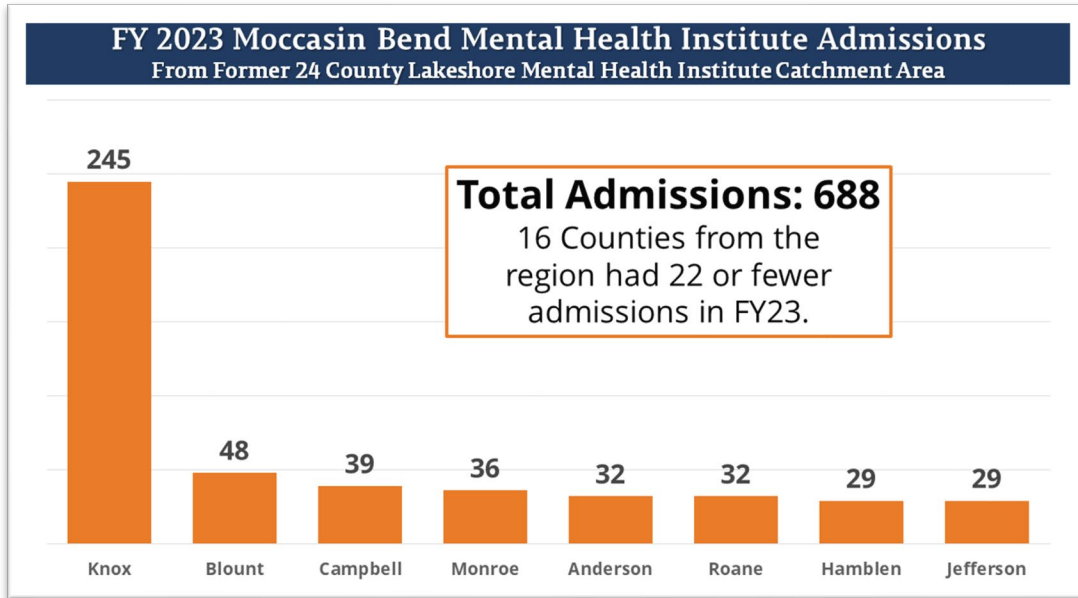
A decade of experience contracting with the three private hospitals has shown that the patient population served there compared to our Regional Mental Health Institutes is different. The state facilities care for more patients who are primarily uninsured, have higher needs based on level of acuity, come from jail or court referral for forensic evaluation, and have significant discharge planning needs. The following (*Graph 3*) depicts the primary diagnoses of the patients being served at Moccasin Bend Mental Health Institute versus the department’s private contracted facilities with schizophrenia being more prevalent at Moccasin Bend Mental Health Institute than the state-contracted private facilities combined.

Graph 3.



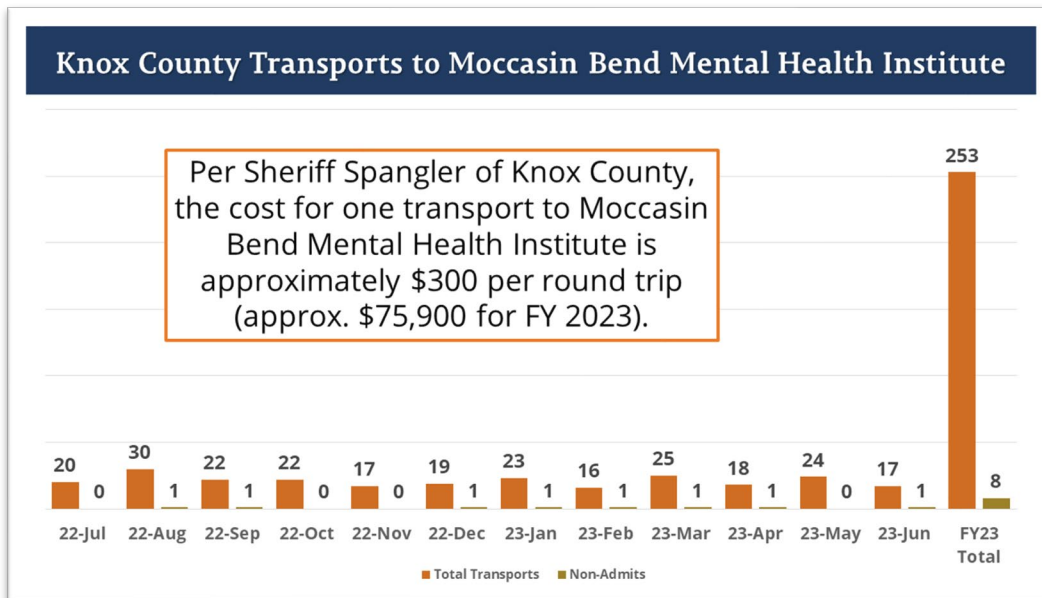
Even with contracts for admissions at three private inpatient psychiatric facilities, several hundred patients from the former 24-county catchment area of Lakeshore Mental Health Institute continue to need hospitalization at a state facility every year. In FY 2023, there were 688 admissions to Moccasin Bend Mental Health Institute from the former 24-county catchment area of Lakeshore Mental Health Institute (*see Graph 4, page 11*). Please note that this data is based on county of residence.

Graph 4.



Of the 688 admissions at Moccasin Bend Mental Health Institute in FY2023 from the former 24-county catchment area of Lakeshore Mental Health Institute, the Knox County Sheriff made 253 transports to Moccasin Bend Mental Health Institute located in Hamilton County. Knox County Sheriff Tom Spangler reported that each transport costs approximately \$300 per round trip including the cost of gas and personnel resulting in a total estimated cost of \$75,900 in FY 2023 (see Graph 5).

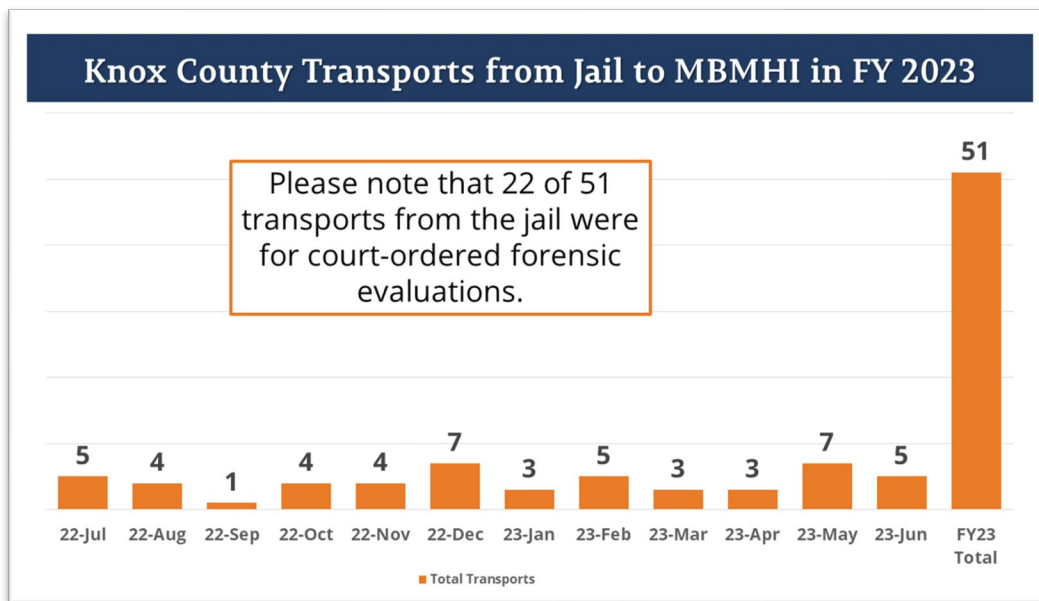
Graph 5.



Additionally, Sheriff Spangler reports that his department tracked their mental health transports over a two-year period (July 2021 – June 2023), and in that timespan, they conducted 3,751 transports to mental health hospitals. More than 40% of those transports (1,622) were to hospitals greater than 45 minutes away. That includes 472 transports to Moccasin Bend Mental Health Institute during that two-year period.

In FY 2023, there were 51 admissions from the Knox County Jail to Moccasin Bend Mental Health Institute with 22 of those admissions for forensic evaluation. Transports directly from the Knox County Jail to Moccasin Bend Mental Health Institute accounted for about 1 in 5 Knox County MBMHI admissions in FY 2023. It is worth noting that the private contracted facilities typically do not serve individuals from jail and/or individuals who are court-ordered for forensic evaluations.

Graph 6.



Regional Population Trends and Bed Availability

Population projections developed by the Boyd Center for Business and Economic Research at the University of Tennessee, Knoxville show that the population of east and northeast Tennessee will continue to grow in the coming decades. The calendar year 2023 total population for the former 24-county Lakeshore Mental Health Institute catchment area is 1,806,772 (see *Appendix, Table II*). Of the total population, 1,405,760 are adults (please note that the child population includes individuals ages 18 and 19 years old due to the way the data was prepared by the Boyd Center, so the adult population is slightly skewed).

There are currently 334 staffed adult inpatient psychiatric beds out of 422 licensed adult inpatient psychiatric beds available at private hospitals in the former 24-county Lakeshore Mental Health Institute catchment area. Licensed beds equate to the total number of beds that a facility can potentially operate versus the total number of beds that a facility has adequate staff to operate.

Based on research, a standard minimum number necessary to meet the inpatient psychiatric needs is 30 beds per 100,000 population. Based on that methodology and the current population of the region, 422 adult inpatient psychiatric beds would meet the minimum standard. Using this same methodology, there are currently 24 staffed adult beds per 100,000 population in the former 24-county Lakeshore Mental Health Institute catchment area.

The Boyd Center study projects a population size of 2,030,015 in the former 24-county Lakeshore Mental Health Institute catchment area by calendar year 2053 (see *Appendix, Table III*). Of those, the adult population is estimated at 1,583,245. Based on the same methodology used above, the former 24-county Lakeshore Mental Health Institute catchment area would need a minimum of 475 adult beds in 2053. Based on 2053 population projections, if no additional beds are added, the former 24-county Lakeshore Mental Health Institute catchment area would provide only 21 staffed adult beds per 100,000 population and 27 licensed adult beds per 100,000 population.

Graph 7.

Regional Population Projections and Inpatient Psychiatric Beds				
	Current	Beds/100,000 Population	2053	Beds/100,000 Projected Population
Regional Population (Adults)	1.4 Million		1.6 Million	
Licensed Beds	422	30	TBD	27 (At Current Levels)
Staffed Beds	334	24	TBD	21 (At Current Levels)
Minimum Staffed Beds to Meet Standard	422	30	475	30
Difference in Staffed Beds to Minimum	88		141	

The number of Tennesseans living with Severe Mental Illness (SMI) is also increasing. Severe Mental Illness is the clinical diagnosis for the most profound mental illnesses which greatly impair a person’s ability to live day-to-day. Prevalence data estimates show the number of adult Tennesseans living with Severe Mental Illness has increased by more than three percent (+12,210 people) in just the last few years.

Graph 8.

	2018	2021	Change
Tennessee Adults Living with SMI	374,100	386,310	+12,210 (+3.3%)

Source: National Study on Drug Use and Health (NSDUH) 2018-2021

Conclusion

As stated above, there are several factors to consider regarding psychiatric hospital bed capacity in the Knox County area. These include:

- Current Bed Capacity and Unpredictability of Private Market
- Burden on Patients Receiving Treatment far from Family and Other Supports and Difficulty in Aftercare Planning/Placement
- Increasing Regional Population and Number of Residents with Severe Mental Illness
- Lack of Ability to Care for Highest Need Patients Among Private Operators
- Lack of Capacity and Expertise to Treat Admissions from Jail or Forensic Cases Among Private Operators
- Burden on Law Enforcement to Travel to Chattanooga for Regional Mental Health Institute Admissions

At current licensed bed capacity, the private hospitals in the former Lakeshore Mental Health Institute catchment area meet the research-backed minimum 30 beds per 100,000 population, but for a variety of reasons, this full capacity is not currently operational. At current operational levels, the private inpatient capacity is 88 beds short of the research-backed minimum. With no way to predict increases or decreases in bed counts among private operators and a regional population expected to grow by about 200,000 in the next three decades, it is not unreasonable to think the shortage of staffed adult beds will fall further into deficit.

TDMHSAS has more than a decade of contracting with three inpatient psychiatric hospitals which have done well caring for patients admitted through our grant funding, however due to lack of resources and expertise, there is a gap for patients with higher needs and those coming from jail or forensic backgrounds which results in admissions to an RMHI. The lack of a state hospital northeast of Chattanooga creates an increased burden to patients who are hospitalized a sizeable distance from their families and/or friends who may offer therapeutic benefit to the patient while hospitalized. It also creates a financial and personnel burden for law enforcement agencies who are compelled by statute to transport patients and for the local governments which fund them. Additionally, the department acknowledges that we cannot project decisions by private market hospital operators to close existing facilities or open new facilities or their willingness and ability to serve indigent and uninsured Tennesseans.

We look forward to your review of this research and report, and we are open to any discussion you would like to have on these matters. As always, we are grateful for your leadership, your support, and your partnership in our work to serve Tennesseans with the greatest behavioral health needs.

Citations

https://www.tn.gov/content/dam/tn/hsda/documents/Psychiatric_Inpatient_Services.pdf – State of Tennessee State Health Plan Certificate of Need Standards and Criteria for Inpatient Psychiatric Services. (Previously used by the Health Services Development Agency prior to excluding inpatient psychiatric beds from the Certificate of Need process required to add inpatient services in TN).

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[TN_CoPopProj_2021.xlsx \(live.com\)](#) – University of Tennessee, Boyd Center for Business and Economic Research, Population Projections for 2020 – 2070.

Appendix

Table II.

Original Lakeshore Mental Health Institute Catchment Area	2023 Total Population	2023 Adult Population (20 and older)
Anderson	78,595	60,651
Blount	138,918	108,734
Campbell	39,640	30,937
Carter	56,052	45,204
Claiborne	32,342	25,584
Cocke	36,597	28,813
Grainger	23,871	18,800
Greene	70,100	55,321
Hamblen	66,054	49,456
Hancock	6,381	4,970
Hawkins	56,935	45,251
Jefferson	56,597	44,362
Johnson	17,780	14,587
Knox	489,230	372,011
Loudon	57,186	45,515
Monroe	48,151	37,552
Morgan	21,659	17,256
Roane	53,994	43,133
Scott	22,143	16,524
Sevier	103,232	80,471
Sullivan	159,811	126,425
Unicoi	17,847	14,323
Union	20,296	15,709
Washington	133,361	104,176
Total 2023 Population for Original Lakeshore Mental Health Institute Catchment Area	1,806,772	1,405,760

Table III.

Original Lakeshore Mental Health Institute Catchment Area	2053 Projected Total Population	2053 Projected Adult Population (20 and older)
Anderson	83,750	65,422
Blount	167,995	131,888
Campbell	34,806	27,749
Carter	48,258	39,496
Claiborne	32,330	26,775
Cocke	36,635	29,581
Grainger	24,126	19,324
Greene	70,030	55,673
Hamblen	75,260	55,278
Hancock	5,131	4,157
Hawkins	52,767	42,929
Jefferson	63,819	50,040
Johnson	16,136	13,613
Knox	610,958	462,377
Loudon	74,116	58,785
Monroe	52,459	42,087
Morgan	22,199	18,189
Roane	51,017	41,388
Scott	21,212	16,211
Sevier	135,611	105,947
Sullivan	159,386	126,294
Unicoi	17,688	14,049
Union	19,166	15,393
Washington	155,160	120,603
Projected 2053 Population for Original Lakeshore Mental Health Institute Catchment Area	2,030,015	1,583,245