

# **Preliminary Report on Prevalence and Hospital/Emergency Department Utilization in Nueces County**

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## **FINAL REPORT**

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MEADOWS  
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## Introduction

In September 2019, Nueces County and the Nueces County Hospital District (NCHD) engaged the Meadows Mental Health Policy Institute (MMHPI) to conduct a comprehensive mental health needs assessment to inform the County's efforts to improve mental health services for residents. As provided in the contract, we committed to producing a preliminary report on prevalence and hospital/emergency department utilization study by November 30, 2019.

The goal of this preliminary report is to provide a deeper understanding of prevalence, comorbid conditions (including substance use issues/disorders), existing provider capacity, and reimbursement issues in Nueces County. This report is extensive. As such, we encourage Nueces County and NCHD to share this report with their own internal data-savvy staff and we welcome questions and concerns regarding what we have laid out in this preliminary report. This feedback will be incorporated in and improve the final comprehensive needs assessment, which will be completed in June 2020.

Please note that Appendix 1 and Appendix 2 present detailed discussions of the methodology and data sources used in these analyses.

## Summary of Key Results

### Demographics and Mental Health Prevalence

Necessary treatment capacity depends in part on the number of people with behavioral health needs, which in turn changes with the size of various populations (for example, adults, or children and youth). For this reason, we begin our analysis with population estimates by demographic group, including age, sex, and race/ethnicity, and projected populations through 2050. Estimates of people living with mental and behavioral health conditions are also included. We have included breakouts by diagnosis and counts of people living in poverty who have serious emotional disturbances or serious mental illnesses. These estimates are reported in Tables 1 through 12.

The demographic data show that across all ages, the majority of the population living in Nueces County is Hispanic or Latino (73% of children and youth and 60% of adults) and a higher proportion of Hispanic or Latino people live in poverty than non-Hispanic Whites (Table 2 and Table 8). By the year 2050, the population of children and youth in Nueces is expected to *increase* by 29% from the 2017 population (Table 3). Meanwhile, the adult population is expected to increase by 41% by 2050, with the older adult population growing faster (59% increase) than other adult populations (38% increase) (Table 9). Based on these projections, the underlying need for behavioral health services for children and youth in Nueces County should show modest growth through 2050, while the need for behavioral health services for older adults may increase disproportionately to other age groups.

We estimate that about 25,000 children and youth in Nueces County have any mental health need, with approximately 5,000 of whom having a serious emotional disturbance (SED) (Table 5). Of those children and youth with SED, just over half are living in poverty. Among Nueces adults, slightly less than one-quarter (about 65,000) of the population is expected to have any mental illness (Table 11). About 10,000 to 15,000 are cases of serious mental illness, more than half of whom are living in poverty. We also estimate that approximately 200 adults living in the county have a high level of impairment that leads to frequent use of crisis resources such as hospitals, emergency rooms, and jails. Oftentimes, these people can benefit from intensive outpatient practices such as Assertive Community Treatment (ACT).

In the Local Mental Health Authority Utilization section of this report, we provide actual counts of people served, by level of care, at Behavioral Health Center of Nueces County, and contrast these counts to the estimated number of people living in poverty who have an SED or SMI (Tables 13 through 18). In this section we find that there is a large gap in care for children and youth with serious emotional disturbance (SED) who are living in poverty. We also find that just 34% of adults in need received care through the LMHA.

### **Utilization of Emergency Departments for Behavioral Health Crises**

Because emergency departments (ED) are required to provide treatment to anyone seeking help, the characteristics of behavioral health patients seeking care are good indicators of those people in the community who experience behavioral health crises. Tables 19 through 25 report ED utilization by Nueces County residents. We found that people were over five times more likely to visit the ED for psychiatric diagnoses than for substance use disorder (SUD) diagnoses (Table 19). This ratio matches the prevalence data, which show that prevalence of all mental health conditions is about five times that of SUD (Table 12).

In this analysis, we also found that self-pay and Medicare patients are less likely to receive inpatient care after visiting an ED. A comparison of all psychiatric ED visits (Table 19) to psychiatric ED visits that resulted in inpatient hospitalization (Table 24) shows that people who are self-funded or funded through Medicare receive inpatient care less frequently after visiting an ED, whereas people with commercial insurance receive care more frequently when compared to payer proportions among total psychiatric ED visits. As with other information on payers, we encourage the local hospitals to confirm these results.

### **Utilization of Inpatient Psychiatric Beds**

Tables 26 through 30 report inpatient bed use everywhere in Texas by Nueces County residents, and, separately, use of Nueces County inpatient psychiatric beds by residents of all Texas counties. Our analysis focuses on identifying whether sufficient beds exist locally to serve

all the needs of Nueces County residents and assessing the impact that insufficient community-based outpatient services capacity has on bed use.

We found that two hospitals in surrounding counties have not provided psychiatric inpatient care for more than a year (and one closed because of Hurricane Harvey), though hospitals in the Nueces County area do not appear to have a shortage of inpatient capacity (Table 30). As compared to residents in the Nueces County area who seek inpatient care elsewhere, a larger number of non-Nueces County residents seek care at Nueces County hospitals. A comparison of daily utilization to staffed capacity shows that on most days in the last few years, area hospitals had unused beds.

Although there appears to be enough local capacity overall, inpatient admissions by people with less generous funding sources may be straining local resources. People visiting the ED and who are then placed in a psychiatric bed are more often placed in local beds when they are self-funded and in non-local beds when they are funded through commercial insurance. This is true for people who were hospitalized immediately after visiting a Nueces County ED (Table 24) and among all Nueces County residents who received inpatient psychiatric care (Table 29).

## **Nueces County Community Demographics and Prevalence Data**

Adults, children, and youth have distinct but overlapping behavioral health needs and systems of care. The capacity needed in each system depends on the number of people with behavioral health needs, which changes with the size of each population. For this reason, we begin our preliminary analysis of Nueces County with a demographic description of the adult, children, and youth population sizes and projected future growth rates for each. Because people living in poverty often have higher rates of behavioral health needs and are dependent on the publicly funded behavioral health system, we provide additional data on the number of people living in poverty within each group and the number of these people with the most severe forms of mental illness.

We obtained demographic and population data from the U.S. Census Bureau's 2017 American Community Survey. Population growth projections for adults, children, and youth are from The Texas Demographic Center. Tables 1 through 6 present data on children and youth, whereas tables 7 through 13 cover adults. We provide detailed tables for Nueces County and summarized data for counties in the surrounding region for comparison (Jim Wells, Kleberg, and San Patricio counties). Tables in later sections report all ages, except where breakouts are provided by age group.

### **Child and Youth Demographics and Behavioral Health Conditions**

Table 1, below, provides detailed population estimates with a demographic breakdown (including age, sex, race, and ethnicity) of children and youth in Nueces County. Because the prevalence of behavioral healthcare needs for young children is poorly understood, and very few receive any type of treatment, we do not provide population data for children under the age of six. We summarize these estimates in Table 2 and provide comparison summaries of the surrounding Kleberg, San Patricio, and Jim Wells counties.

As reported in Table 1, the population of Nueces County is predominantly Hispanic or Latino, evenly split between male and female youth, with approximately half of children and youth living below 200% of the federal poverty level. Table 2 shows that 73% of Nueces County children and youth are Hispanic or Latino, but this population makes up 84% of the poverty population, indicating a higher rate of poverty for this demographic group than for Non-Hispanic White children, who make up 21% of the total population but only 10% of the poverty population. In addition, children and youth between the ages of six and 11 make up just under half (49%) of the total population but account for 52% of the poverty population, whereas the reverse is true for older children between the ages of 12 and 17. Thus, younger children are slightly more likely to live in poverty than are older children and youth in Nueces County.

Compared to the surrounding counties of Kleberg, San Patricio, and Jim Wells, Nueces County is generally demographically similar to the larger region – predominantly Hispanic/Latino, evenly split by age group and sex. However, Jim Wells and Kleberg counties have a higher percentage of Hispanic and Latino children (84%) compared to Nueces County children and youth (73%), whereas San Patricio County has a lower percentage of Hispanic and Latino children (63%). Across all counties, Hispanic and Latino children make up a higher proportion of the poverty population than of the total population, whereas Non-Hispanic White children make up a lower proportion of the poverty population relative to the total population.

**Table 1: Demographics of Children and Youth in Nueces County (2017)<sup>1</sup>**

Population	Total Population	Total Population with SED	Total in Poverty <sup>2</sup>	Total with SED in Poverty
Children and Youth (6–17)	60,000	5,000	30,000	3,000
<b>Age</b>				
Ages 6–11	30,000	2,000	15,000	1,000
Ages 12–17	30,000	2,000	15,000	1,000
<b>Sex</b>				
Male	30,000	2,000	15,000	1,000
Female	30,000	2,000	15,000	1,000
<b>Race/Ethnicity</b>				
Non-Hispanic White	15,000	900	3,000	300
African American	2,000	200	1,000	100
Asian American	1,000	80	300	30
Native American	70	<6	0	0
Multiple Races	600	40	200	20
Hispanic/Latino	45,000	4,000	25,000	2,000

<sup>1</sup> All Texas population estimates are rounded to reflect uncertainty in the underlying American Community Survey population estimates. Because of this rounding process, row or column totals may not equal the sum of their rounded counterparts. Estimated values between 1 and 5 are rounded to “<6,” and estimated values between 5 and 9 are rounded to “<10.”

<sup>2</sup> “In poverty” refers to the estimated number of people below 200% of the federal poverty level for the specified region.

**Table 2: Summary Demographics of Children and Youth in Nueces, Jim Wells, Kleberg, and San Patricio Counties (2017)<sup>3</sup>**

<b>Population</b>	<b>Nueces</b>		<b>Jim Wells</b>		<b>Kleberg</b>		<b>San Patricio</b>	
<b>Total Population</b>	<b>Total Pop.</b>	<b>Total Poverty</b>	<b>Total Pop.</b>	<b>Total Poverty</b>	<b>Total Pop.</b>	<b>Total Poverty</b>	<b>Total Pop.</b>	<b>Total Poverty</b>
All Children and Youth	60,000	30,000	7,000	4,000	5,000	3,000	10,000	6,000
<b>Age</b>	<b>% of Total Pop.</b>	<b>% of Total Poverty</b>	<b>% of Total Pop.</b>	<b>% of Total Poverty</b>	<b>% of Total Pop.</b>	<b>% of Total Poverty</b>	<b>% of Total Pop.</b>	<b>% of Total Poverty</b>
Ages 6–11	49%	52%	48%	53%	48%	53%	49%	51%
Ages 12–17	51%	48%	52%	47%	52%	47%	51%	49%
<b>Sex</b>								
Male	51%	51%	51%	49%	51%	49%	51%	47%
Female	49%	49%	49%	51%	49%	51%	49%	53%
<b>Race/Ethnicity</b>								
Non-Hispanic White	21%	10%	13%	8%	13%	8%	32%	20%
African American	4%	4%	1%	1%	1%	1%	2%	1%
Asian American	2%	1%	1%	0%	1%	0%	0%	0%
Native American	0%	0%	0%	0%	0%	0%	0%	0%
Multiple Races	1%	1%	0%	0%	0%	0%	3%	4%
Hispanic/Latino	73%	84%	84%	90%	84%	90%	63%	74%

<sup>3</sup> All Texas prevalence and population estimates are rounded to reflect uncertainty in the underlying American Community Survey population estimates. The reported percentages are calculated using unrounded estimates. Because of this rounding process, the reported percentages may not equal percentages calculated using rounded estimates.



Table 3, below, shows projected population change among children and youth in Nueces County. The population of children and youth is expected to *increase* by more than 17,000 children and youth – from about 62,000 in 2017 to 79,000 in 2050. This represents a 30% increase by 2050, with a slightly higher increase among children ages six to 11 (30%) compared to youth ages 12 to 17 (27%). In comparison, as Table 4 reports, the child and youth population of San Patricio County is expected to increase by only 11%, whereas in Jim Wells County, the population is expected to remain at 2017 levels. Meanwhile, in Kleberg County, the population of children and youth is expected to *decrease* by 11% through 2050.

Based on these projections, the underlying need for behavioral health services for children and youth in Nueces County should show modest growth through 2050, with little to no growth in surrounding counties. In the full report that we will submit at the end of this assessment, there will be a description of how well the current system of care addresses the needs of children and youth.

**Table 3: Estimated Population of Children and Youth in Nueces County – 2017 through 2050<sup>4</sup>**

Year	Children Ages 6 to 11		Youth Ages 12 to 17		All Children and Youth	
	Population	Percentage Change from 2017	Population	Percentage Change from 2017	Population	Percentage Change from 2017
<b>2017</b>	<b>30,372</b>		<b>31,346</b>		<b>61,718</b>	
2020	31,600	4%	31,369	0%	62,969	2%
2025	34,466	13%	32,682	4%	67,148	9%
2030	36,399	20%	35,705	14%	72,104	17%
2035	37,121	22%	37,863	21%	74,984	21%
2040	37,354	23%	38,825	24%	76,178	23%
2045	38,153	26%	39,053	25%	77,206	25%
2050	39,606	30%	39,714	27%	79,320	29%

<sup>4</sup> Estimated 2017 populations obtained from the 2017 American Community Survey population estimates. Projected population change was obtained from: Texas Demographic Center (2018). *Texas Population Projection Program – Age, Sex, and Race/Ethnicity (ASRE) Population [Excel file]*. Retrieved from: [demographics.texas.gov/Data/TPEPP/Projections/](https://demographics.texas.gov/Data/TPEPP/Projections/)

**Table 4: Estimated Population of Children and Youth in Jim Wells, Kleberg, and San Patricio Counties – 2017 through 2050<sup>5</sup>**

Year	Jim Wells		Kleberg		San Patricio	
	Child and Youth Population	Percentage Change from 2017	Child and Youth Population	Percentage Change from 2017	Child and Youth Population	Percentage Change from 2017
<b>2017</b>	<b>7,190</b>		<b>5,481</b>		<b>11,038</b>	
2020	7,412	3%	5,086	-7%	10,946	-1%
2025	7,792	8%	4,445	-19%	11,281	2%
2030	7,906	10%	4,239	-23%	11,943	8%
2035	7,656	6%	4,614	-16%	12,428	13%
2040	7,344	2%	4,779	-13%	12,484	13%
2045	7,193	0%	4,568	-17%	12,331	12%
2050	7,154	0%	4,227	-23%	12,258	11%

Because accessing behavioral health services often depends on geographic factors such as travel time, it is important to know where children and youth with behavioral health needs live in Nueces County.

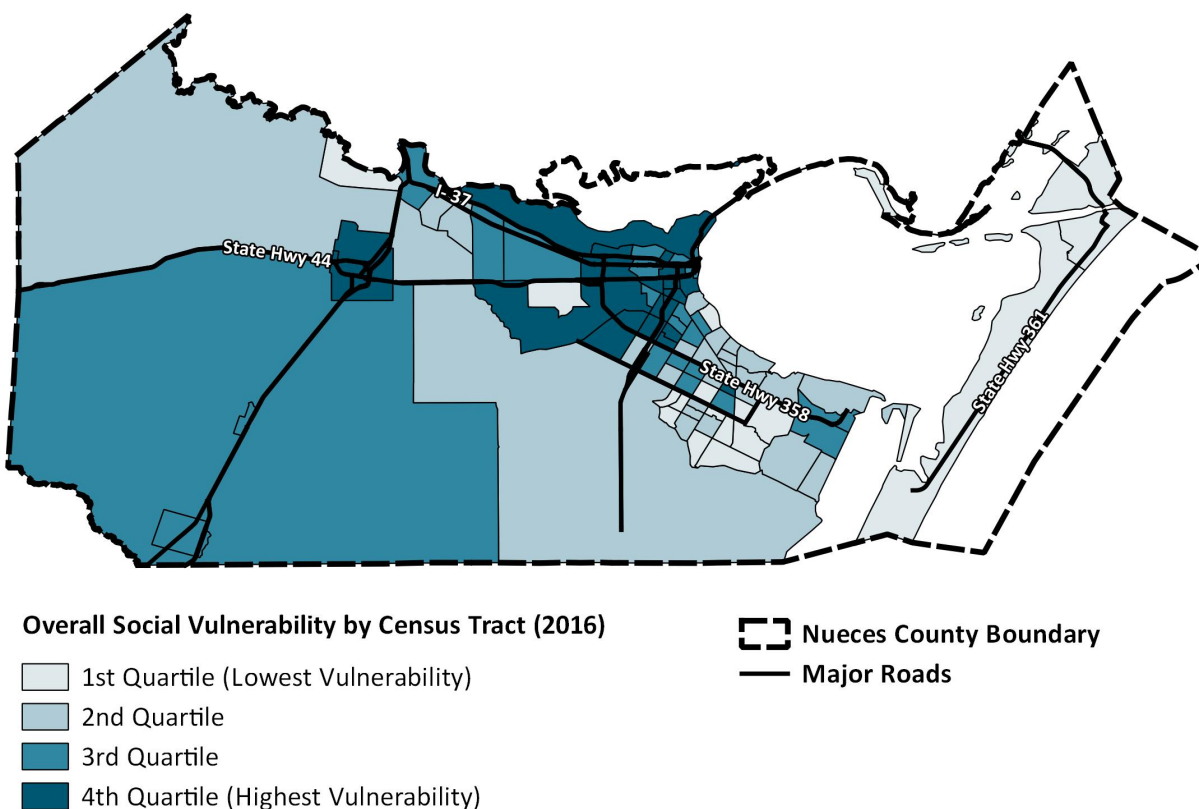
Maps 1 through 5, below, show subdivisions of counties, called “census tracts,” in Nueces County. Census tracts are shaded according to several factors: overall social vulnerability (Map 1), the count of children and youth in poverty (Map 2), the change in the number of children and youth in poverty from 2012 to 2017 (Map 3), the count of Hispanic/Latino people of all ages (Map 4), and the change in the number of Hispanic/Latino people from 2012 to 2017 (Map 5).

Map 1 shows each census tract in Nueces County, ranked by overall social vulnerability from the Center for Disease Control and Prevention’s (CDC) Social Vulnerability Index (SVI). Social vulnerability is determined based on 15 factors in each community that are grouped into four major themes: socioeconomic status, household composition and disability, minority status and language, and housing and transportation. We then ranked and categorized the overall vulnerability ratio for all census tracts in the Nueces County in comparison with one another: first quartile (lowest vulnerability), second quartile, third quartile, and fourth quartile (highest vulnerability). As the map shows, communities near Corpus Christi, where I-37 meets the coast,

<sup>5</sup> Estimated 2017 populations obtained from the 2017 American Community Survey population estimates. Projected population change was obtained from: Texas Demographic Center (2018). *Texas Population Projection Program – Age, Sex, and Race/Ethnicity (ASRE) Population [Excel file]*. Retrieved from: [demographics.texas.gov/Data/TPEPP/Projections/](https://demographics.texas.gov/Data/TPEPP/Projections/)

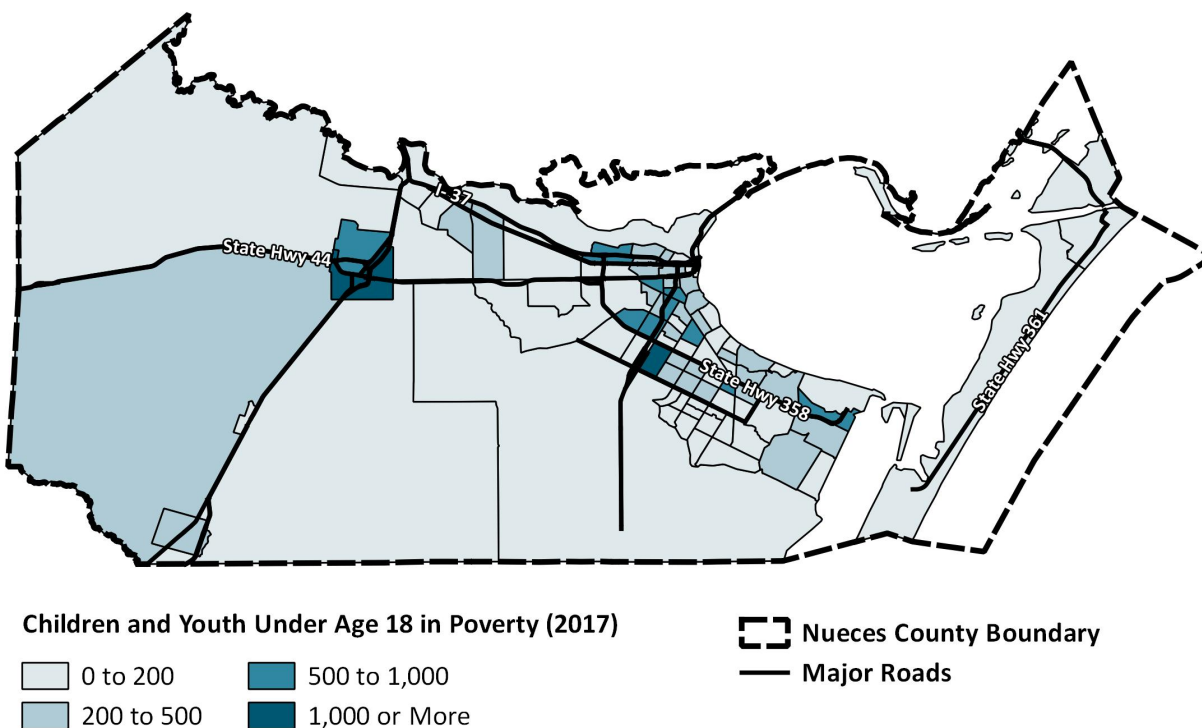
are ranked as high vulnerability (dark blue) as are the communities near Robstown off State Highway 44. In contrast, Port Aransas/Mustang Island along State Highway 361 and the communities in the south-central part of Nueces County are low vulnerability communities (light blue).

**Map 1: Social Vulnerability Index. by Census Tract (2016)<sup>6</sup>**



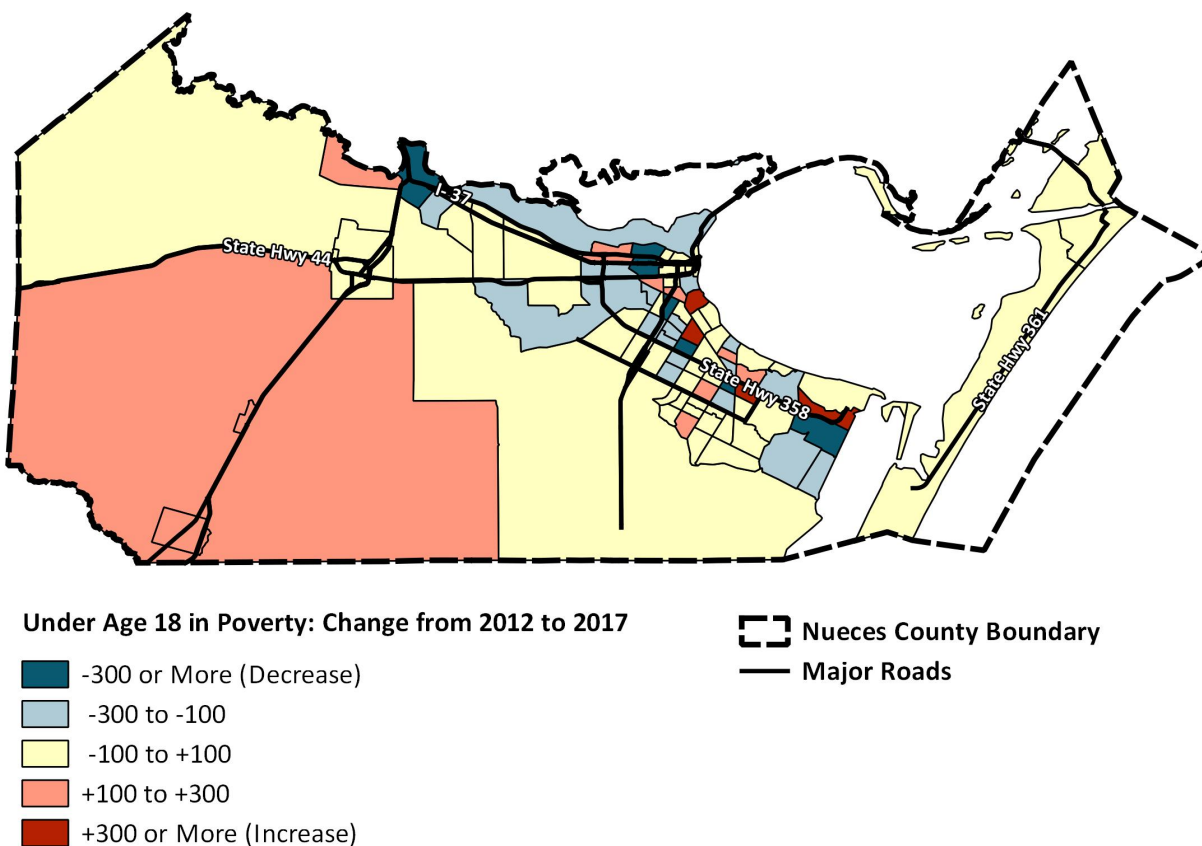
Similarly, Map 2 shows counts of children and youth in poverty by census tract, with dark blue areas signifying regions with high counts of children and youth in poverty as compared to the overall county. As reported in Map 1, the region near Corpus Christi/Robstown in Map 2 has tracts with high counts of children and youth in poverty, whereas Port Aransas has lower counts of children and youth in poverty.

<sup>6</sup> Obtained from the Centers for Disease Control and Prevention (CDC) 2016 Social Vulnerability Index (SVI). We used the "RPL\_Themes" variable as a composite indicator for overall social vulnerability. Retrieved from [https://svi.cdc.gov/Documents/Data/2016\\_SVI\\_Data/SVI2016Documentation.pdf](https://svi.cdc.gov/Documents/Data/2016_SVI_Data/SVI2016Documentation.pdf)

**Map 2: Children and Youth Under Age 18 in Poverty, by Census Tract (2017)<sup>7</sup>**

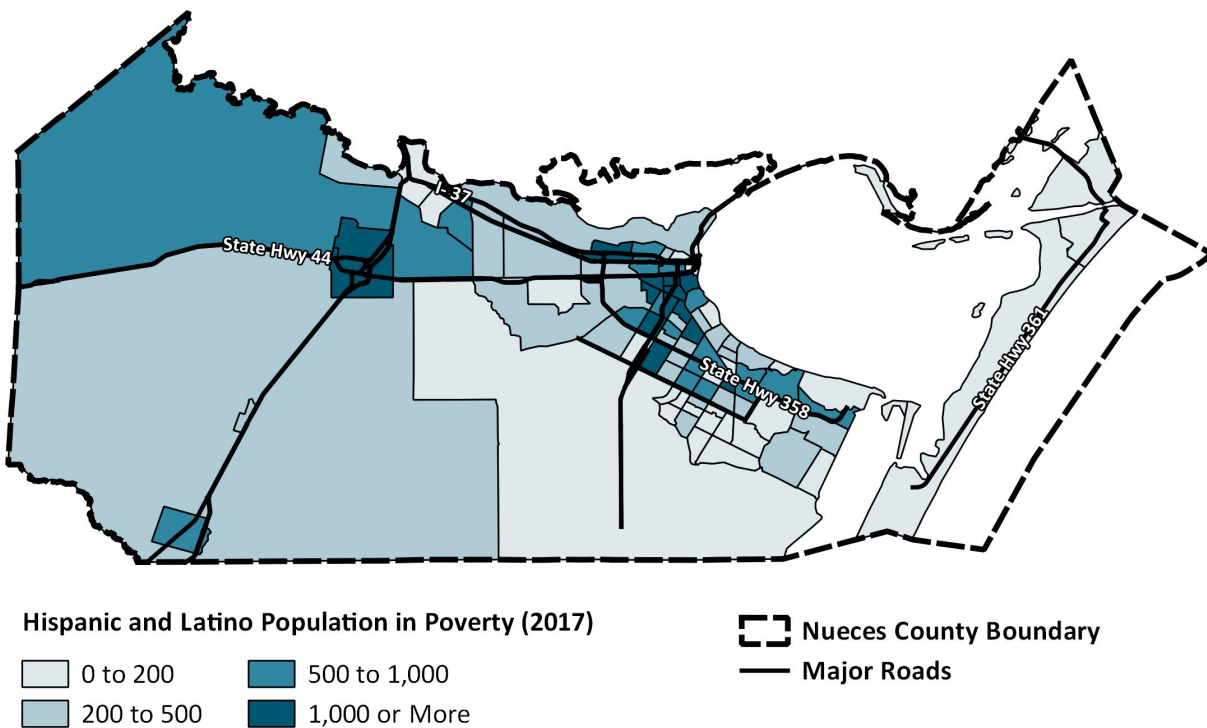
Map 3, below, shows the change of the population of children and youth living in poverty from 2012 to 2017. Areas in pink and red show pockets where the count of children and youth living in poverty increased, whereas areas in blue show locations where the number of children and youth in poverty decreased. Yellow regions show where the population in poverty remained stable. Overall, the large region in the bottom left corner of the map (southeast Nueces County) showed a modest increase in poverty. Near Corpus Christi, along State Highway 358, are multiple areas with substantial increases in the poverty population in close proximity to areas with substantial decreases in poverty. This distinction shows that communities that are rapidly increasing (and decreasing) in poverty are highly localized.

<sup>7</sup> Poverty data obtained from the U.S. Census Bureau, American Community Survey 2015 Five-Year Estimates. Table S1701: Poverty Status in the Past 12 Months. Retrieved from <https://factfinder.census.gov>

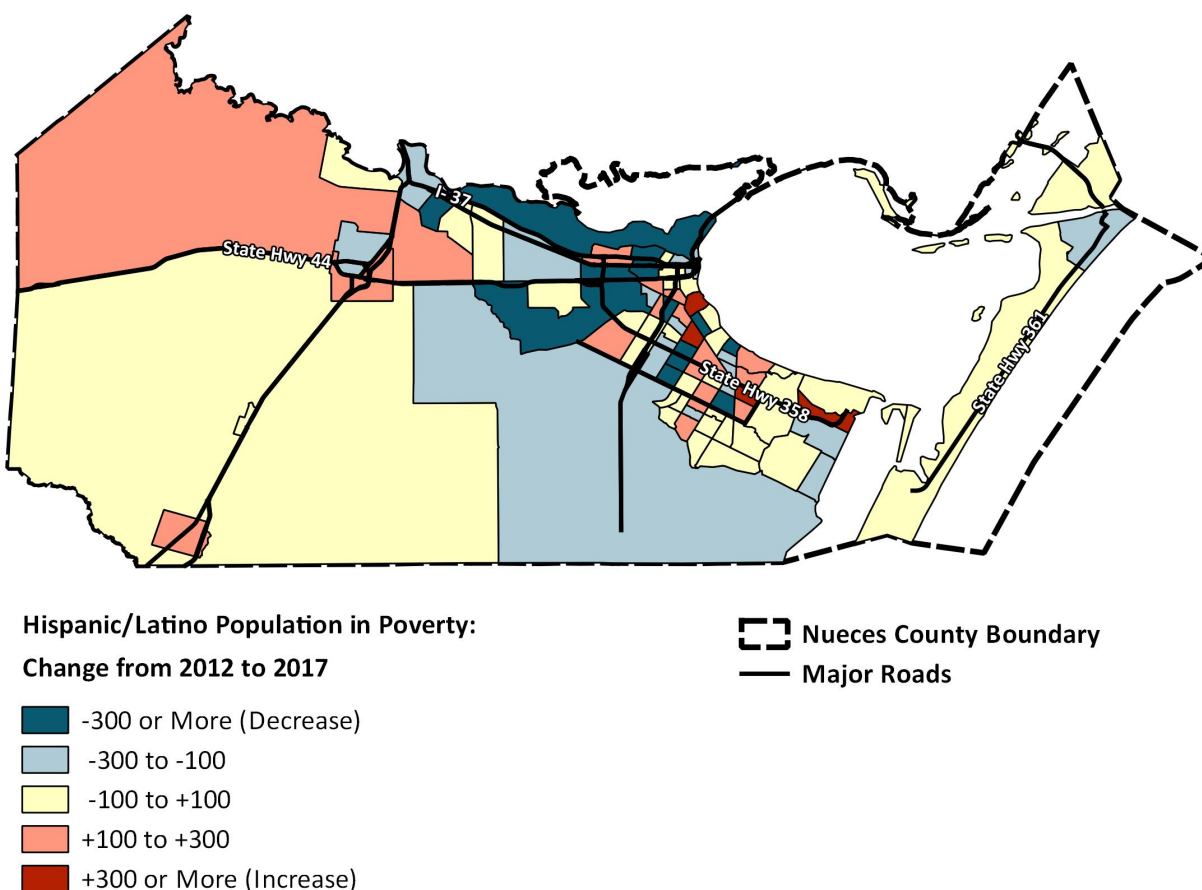
**Map 3: Children and Youth Under Age 18 Change in Poverty, by Census Tract (2012 to 2017)**

Similar to Map 2, Map 4 shows demographic counts by census tract. This map reports the counts of Hispanic/Latino children and youth across Nueces County. The region near Corpus Christi, where I-37 meets the coast, and the region off of State Highway 44 both have high counts of Hispanic/Latino people.

From 2012 to 2017, as Map 5 shows, the count of Hispanic and Latino people increased substantially along State Highway 358 in Corpus Christi, as well as in the northeast portion of the county. When planning for services to meet the needs of this population, it may be useful to consider where providers are located in contrast to those in need. For example, planning may consider whether there are any Spanish-speaking providers and, if so, whether they are located in proximity to the Spanish-speaking population.

**Map 4: Hispanic/Latino Population in Poverty, by Census Tract (2017)<sup>8</sup>**

<sup>8</sup> Poverty data obtained from the U.S. Census Bureau, American Community Survey 2015 Five-Year Estimates. Table S1701: Poverty Status in the Past 12 Months. Retrieved from <https://factfinder.census.gov>

**Map 5: Hispanic/Latino Population Change in Poverty, by Census Tract (2012 to 2017)**

The next two tables provide prevalence estimates of various mental health conditions (Table 5) and substance use disorders (Table 6) among children and youth in Nueces County alongside comparisons to neighboring counties.

Table 5 shows that there are about 25,000 children and youth in Nueces County with any mental health needs. In comparison, Jim Wells, Kleberg, and San Patricio are smaller counties with approximately 3,000, 2,000, and 4,000 children and youth with mental health needs (respectively). In Nueces County specifically, of the children and youth with mental health needs, more than half (15,000) are expected to have mild conditions, whereas about 5,000 are expected to have moderate conditions and another 5,000 are expected to have mental health needs that cause enough impairment to be considered serious emotional disturbance (SED). Of those children and youth with SED, just over half (3,000) are living in poverty. The most severe conditions – causing so much impairment that the child or youth is at risk for out-of-home or out-of-school placement or involvement in the child welfare system – are expected to affect about 300 children and youth in the region. These children and youth may benefit from



intensive wraparound care that could be provided at the local mental health authority through YES waiver services.

The estimated number of children and youth with adverse childhood experiences (ACEs) are also included in Table 5. Experiences of abuse or neglect; having incarcerated parents; and witnessing intimate partner violence, substance misuse, or mental illness within the home are all considered adverse childhood experiences. These types of stressful and traumatic events are correlated with a range of health problems throughout life, including substance use, behavioral health, and physical health conditions.<sup>9</sup> About 9,000 children and youth in Nueces County are expected to have experienced three or more ACEs and have a much higher risk for health problems, including mental illness, later in life.

It is also worth noting that there are relatively few anticipated new cases of first episode psychosis (FEP) in a given year. This comparatively small number makes intervention possible, assuming appropriate capacity to identify and treat individuals experiencing FEP; this is something we will address in detail in the full report.

**Table 5: Twelve-Month Prevalence of Mental Health Disorders in Children and Youth in Nueces County (2017)**

Mental Health Condition – Children and Youth	Age Range	Prevalence <sup>10</sup>			
		Nueces	Jim Wells	Kleberg	San Patricio
<b>Total Population</b>	<b>6–17</b>	<b>60,000</b>	<b>7,000</b>	<b>5,000</b>	<b>10,000</b>
Population in Poverty <sup>11</sup>	6–17	30,000	4,000	3,000	6,000
<b>All Mental Health Needs (Mild, Moderate, and Severe)<sup>12</sup></b>	<b>6–17</b>	<b>25,000</b>	<b>3,000</b>	<b>2,000</b>	<b>4,000</b>
Mild	6–17	15,000	2,000	1,000	2,000
Moderate	6–17	5,000	600	500	1,000

<sup>9</sup> SAMHSA-HRSA Center for Integrated Health Solutions. (n.d.). *Trauma*. Retrieved from <https://www.integration.samhsa.gov/clinical-practice/trauma-informed>

<sup>10</sup> All Texas prevalence and population estimates are rounded to reflect uncertainty in the underlying American Community Survey population estimates. Because of this rounding process, row or column totals may not equal the sum of their rounded counterparts. Estimated values between 1 and 5 are rounded to “<6,” and estimated values between 5 and 9 are rounded to “<10.”

<sup>11</sup> “In poverty” refers to the estimated number of people below 200% of the federal poverty level for the specified region.

<sup>12</sup> Kessler, R. C., et al. (2012)a. Prevalence, persistence, and sociodemographic correlates of DSM-IV disorders in the National Comorbidity Survey Replication Adolescent Supplement. *Archives of General Psychiatry*, 69(4), 372–380, and Kessler, R. C., et al. (2012)b. Severity of 12-Month DSM-IV disorders in the National Comorbidity Survey Replication Adolescent Supplement. *Archives of General Psychiatry*, 69(4), 381–389.



Mental Health Condition – Children and Youth	Age Range	Prevalence <sup>10</sup>			
		Nueces	Jim Wells	Kleberg	San Patricio
Severe – Serious Emotional Disturbance (SED) <sup>13</sup>	6–17	5,000	600	400	900
SED in Poverty	6–17	3,000	400	300	500
At Risk for Out-of-Home/Out-of-School Placement <sup>14</sup>	6–17	300	40	30	50
<b>Specific Disorders – Youth<sup>15</sup></b>					
Depression	12–17	3,000	300	200	500
Bipolar Disorder	12–17	700	80	60	100
Post-Traumatic Stress Disorder	12–17	1,000	100	100	200
Schizophrenia <sup>16</sup>	12–17	70	<10	<10	10
First Episode Psychosis (FEP) Incidence – New Cases per Year <sup>17</sup>	12–17	10	<6	<6	<6
Obsessive-Compulsive Disorder – Children/Youth <sup>18</sup>	6–17	1,000	100	100	200

<sup>13</sup> Local prevalence estimates of SED are drawn from Holzer, C., Nguyen, H., & Holzer, J. (2017). *Texas county-level estimates of the prevalence of severe mental health need in 2017*. Dallas, TX: Meadows Mental Health Policy Institute.

<sup>14</sup> MMHPI estimates that 10% of children and youth with SED are most at risk for school failure and involvement in the juvenile justice system. These youth need intensive family- and community-based services.

<sup>15</sup> Unless otherwise specified, local prevalence estimates of specific mental health conditions among youth are drawn from the 12-month prevalence rates reported in Kessler, R. C., et al. (2012). Prevalence, persistence, and sociodemographic correlates of DSM-IV disorders in the National Comorbidity Survey Replication Adolescent Supplement. *Archives of General Psychiatry*, 69(4), 372–380.

<sup>16</sup> Local prevalence estimates of schizophrenia are drawn from the 12-month prevalence rates reported in Androutsos, C. (2012). Schizophrenia in children and adolescents: Relevance and differentiation from adult schizophrenia. *Psychiatriki*, 23(Supl), 82–93 (original article in Greek). Androutsos estimates that among youth ages 13–18, 0.23% meet criteria for the diagnosis of schizophrenia.

<sup>17</sup> Local incidence estimates of first episode psychosis are drawn from the 12-month prevalence rates reported in Kirkbride, J. B., et al. (2017). The epidemiology of first-episode psychosis in early intervention in psychosis services: Findings from the Social Epidemiology of Psychoses in East Anglia [SEPEA] study. *American Journal of Psychiatry*, 174, 143–153.

<sup>18</sup> Local prevalence estimates of obsessive-compulsive disorders are drawn from the 12-month prevalence rates reported in Boileau, B. (2011). A review of obsessive-compulsive disorder in children and adolescents. *Dialogues in Clinical Neuroscience*, 13(4), 401–411; Peterson, B., et al. (2001). Prospective, longitudinal study of tic, obsessive-compulsive, and attention-deficit/hyperactivity disorders in an epidemiological sample. *Journal of the American Academy of Child and Adolescent Psychiatry*, 40(6), 685–695; and Douglas, H. M., et al. (1995). Obsessive-compulsive disorder in a birth cohort of 18-year-olds: Prevalence and predictors. *Journal of the American Academy of Child and Adolescent Psychiatry*, 34(11), 1424–1431.

Mental Health Condition – Children and Youth	Age Range	Prevalence <sup>10</sup>			
		Nueces	Jim Wells	Kleberg	San Patricio
Eating Disorders <sup>19</sup>	12–17	300	30	20	40
Self-Injury/Harming Behaviors <sup>20</sup>	12–17	3,000	400	300	500
Conduct Disorder	12–17	2,000	200	200	300
Number of Deaths by Suicide <sup>21</sup>	0–17	<10	<10	<10	<10
<b>Specific Disorders – Children Only</b>					
All Anxiety Disorders – Children	6–11	3,000	400	300	600
Depression/All Mood Disorders – Children	6–11	300	30	30	50
<b>Children and Youth with Adverse Childhood Experiences (ACEs)<sup>22</sup></b>					
Population with 1 or 2 ACEs	0–17	30,000	4,000	3,000	7,000
Population with 3 or More ACEs	0–17	9,000	1,000	800	2,000

Table 6 provides an overview of the estimated number of youth with substance use disorders in Nueces and surrounding counties. Based on the latest available data from the National Survey on Drug Use and Health region-specific estimates, we expect there to be approximately 1,000 youth in Nueces County with substance use disorders, with much lower counts in the smaller surrounding counties. Slightly more than half (700) are living in poverty, and slightly fewer than half (300) have co-occurring psychiatric and substance use disorders.

<sup>19</sup> Local prevalence estimates of eating disorders are drawn from the 12-month prevalence rates reported in Swanson, S. A., et al. (2011). Prevalence and correlates of eating disorders in adolescents: Results from the National Comorbidity Survey Replication Adolescent Supplement. *Archives of General Psychiatry*, 68(7), 714–723. The prevalence estimate for eating disorders encompasses only Anorexia Nervosa and Bulimia Nervosa.

<sup>20</sup> Local prevalence estimates of self-harming and self-injury behaviors are drawn from the 12-month prevalence rates reported in Muehlenkamp, J. J., et al. (2012). International prevalence of adolescent non-suicidal self-injury and deliberate self-harm. *Child and Adolescent Psychiatry and Mental Health*, doi: 10.1186/1753-2000-6-10

<sup>21</sup> Death by suicide data obtained from Centers for Disease Control and Prevention, Underlying Cause of Death 1999–2017 on CDC WONDER Online Database.

<sup>22</sup> Local prevalence estimates of adverse childhood experiences are drawn from state-level 12-month prevalence rates reported in Sacks, V., Murphey, D., & Moore, K. (2014). *Adverse childhood experiences: National and state-level prevalence (research brief No. 2014–28)*. Bethesda, Maryland: Child Trends. Retrieved from [https://www.childtrends.org/wp-content/uploads/2014/07/Brief-adverse-childhood-experiences\\_FINAL.pdf](https://www.childtrends.org/wp-content/uploads/2014/07/Brief-adverse-childhood-experiences_FINAL.pdf)

**Table 6: Prevalence of Substance Use Disorders (SUD) Among Youth Ages 12 to 17 (2017)<sup>23,24</sup>**

Population	Nueces	Jim Wells	Kleberg	San Patricio
<b>Total Population</b>	<b>30,000</b>	<b>4,000</b>	<b>3,000</b>	<b>6,000</b>
Total Population in Poverty	15,000	2,000	1,000	3,000
<b>Any Substance Use Disorder</b>	<b>1,000</b>	<b>100</b>	<b>100</b>	<b>200</b>
SUD in Poverty <sup>25</sup>	700	90	70	200
Comorbid Psychiatric and SUD <sup>26,27</sup>	300	40	30	70
Needing but Not Receiving Treatment for Substance Use	1,000	100	90	200
<b>Alcohol-Related SUD</b>	<b>500</b>	<b>50</b>	<b>40</b>	<b>90</b>
Needing but Not Receiving Treatment for Alcohol Use	500	50	40	90
<b>Illicit Drug-Related SUD</b>	<b>800</b>	<b>80</b>	<b>70</b>	<b>200</b>
Needing but Not Receiving Treatment for Illicit Drug Use	700	80	70	100
<b>Number of Drug-Related Deaths in 2017<sup>28</sup></b>	<b>&lt;10</b>	<b>&lt;10</b>	<b>&lt;10</b>	<b>&lt;10</b>
<b>Number of Alcohol-Induced Deaths in 2017<sup>29</sup></b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>

<sup>23</sup> Unless otherwise specified, estimated prevalence of substance use disorders are based on prevalence rates are drawn from 2016–2017 National Survey on Drug Use and Health: Model-Based Prevalence Estimates – Texas.

<sup>24</sup> All Texas prevalence and population estimates are rounded to reflect uncertainty in the underlying Texas Demographic Center population estimates. Because of this rounding process, row or column totals may not equal the sum of their rounded counterparts. Estimated values between 1 and 5 are rounded to “<6,” and estimated values between 5 and 9 are rounded to “<10.”

<sup>25</sup> The prevalence of any substance use disorder among adults and youth living in poverty is drawn from the national prevalence rate of alcohol or illicit drug dependence among those living at 199% ,or less, of the federal poverty level according to results from the National Survey on Drug Use and Health, 2014.

<sup>26</sup> The local prevalence of co-occurring psychiatric and substance abuse disorders among adults are based on the intersection between the national prevalence rate of any mental illness and substance use disorder, as reported in SAMHSA’s 2018 *Behavioral Health Trends in the United States: Results from the 2017 National Survey on Drug Use and Health* (HHS Publication No. SMA 18-5068, NSDUH Series H-53) report and the 2016–2017 National Survey on Drug Use and Health (NSDUH) rates of SMI for Texas.

<sup>27</sup> The local prevalence of comorbid psychiatric and substance use disorders among youth ages 12–17 is based on intersection between the national prevalence rate of major depressive episodes and SUD, as reported in SAMHSA’s 2018 *Behavioral Health Trends in the United States: Results from the 2017 National Survey on Drug Use and Health* (HHS Publication No. SMA 18-5068, NSDUH Series H-53) report and the 2014–2016 National Survey on Drug Use and Health (NSDUH) sub-state rates of MDE for Texas.

<sup>28</sup> Death by drug overdose data were obtained from Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death 1999–2017 on CDC WONDER Online Database. Accessed at <http://wonder.cdc.gov/mcd-icd10.html>. Overdose deaths are classified using underlying cause-of-death ICD-10 codes: X40–44, X60–64, X85, and Y10–Y14.

<sup>29</sup> The number of alcohol-induced deaths were obtained from the Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death 1999–2017 on CDC WONDER Online Database.

## Adult Demographics and Behavioral Health Conditions

Below, Table 7 details population estimates, by demographic group, in Nueces County. We summarize these estimates in Table 8 and provide a comparison to surrounding counties. Overall, as shown in Table 7, about 270,000 adults live in the county. The population is predominantly Hispanic/Latino, with a smaller subset of the population identifying as Non-Hispanic White and smaller counts of African American and other people of color. The population is evenly split by sex and by age group for those above the age of 35. However, the population of young adults (ages 18 to 24) is much smaller than the population of adults between the ages of 25 to 34 (35,000 compared to 55,000).

Table 8 provides summarized demographics to compare to the surrounding counties. As we see in Nueces County, there are fewer young adults in surrounding counties than there are older adults. The population is evenly split between men and women, with higher counts of Hispanic/Latino people compared to people of other race and ethnicity groups – with one exception. In San Patricio County, the population is evenly split between White and Non-Hispanic White people (each make up 47% of the population). For Nueces and surrounding counties, women comprise approximately half of the population but more than half of the poverty population – showing that women are more likely to be living in poverty in Nueces County and the larger region. Similarly, the Hispanic/Latino population makes up a higher proportion of the poverty population relative to the general population, which means that Hispanics and Latinos in the region are disproportionately affected by poverty than is the White population, which makes up less of the poverty population compared to the total population.

**Table 7: Demographics of Adults in Nueces County (2017)<sup>30</sup>**

Nueces County	Total Population	Total Population with SMI	Total in Poverty <sup>31</sup>	Total with SMI in Poverty
Adult Population 18+	270,000	10,000	90,000	7,000
<b>Age</b>				
18–20	15,000	300	6,000	200

Accessed at <http://wonder.cdc.gov/mcd-icd10.html>. Alcohol induced deaths are classified using any underlying cause of death and multiple causes of death category, “alcohol-induced causes.” In order to meet the CDC’s confidentiality restraints, counts of deaths of fewer than 10 are suppressed using values of “<10.”

<sup>30</sup> All Texas population estimates are rounded to reflect uncertainty in the underlying American Community Survey population estimates. Because of this rounding process, row or column totals may not equal the sum of their rounded counterparts. Estimated values between 1 and 5 are rounded to “<6,” and estimated values between 5 and 9 are rounded to “<10.”

<sup>31</sup> “In poverty” refers to the estimated number of people below 200% of the federal poverty level for the specified region.

Nueces County	Total Population	Total Population with SMI	Total in Poverty <sup>31</sup>	Total with SMI in Poverty
21–24	20,000	900	9,000	600
25–34	55,000	3,000	20,000	2,000
35–44	45,000	3,000	15,000	2,000
45–54	45,000	2,000	15,000	1,000
55–64	45,000	1,000	10,000	800
65+	50,000	800	15,000	400
<b>Sex</b>				
Male	130,000	5,000	40,000	2,000
Female	140,000	7,000	50,000	5,000
<b>Race/Ethnicity</b>				
Non-Hispanic White	90,000	4,000	20,000	2,000
African American	10,000	600	3,000	300
Asian American	6,000	100	1,000	50
Native American	700	50	400	40
Multiple Races	2,000	100	700	80
Hispanic/Latino	160,000	7,000	65,000	5,000

**Table 8: Summary Demographics of Adults in Nueces, Jim Wells, San Patricio, and Kleberg Counties (2017)**

Population	Nueces		Jim Wells		Kleberg		San Patricio	
Total Population	Total Pop.	Total Poverty	Total Pop.	Total Poverty	Total Pop.	Total Poverty	Total Pop.	Total Poverty
All Adults	270,000	90,000	30,000	15,000	25,000	10,000	50,000	15,000
Age	% of Total Pop.	% of Total Poverty	% of Total Pop.	% of Total Poverty	% of Total Pop.	% of Total Poverty	% of Total Pop.	% of Total Poverty
18–20	6%	7%	8%	9%	8%	9%	5%	8%
21–24	8%	10%	11%	14%	11%	14%	7%	9%
25–34	19%	21%	18%	18%	18%	18%	18%	18%
35–44	16%	15%	16%	14%	16%	14%	16%	15%
45–54	17%	14%	14%	12%	14%	12%	17%	14%
55–64	16%	14%	14%	11%	14%	12%	16%	14%
65+	18%	19%	19%	21%	19%	21%	21%	22%

Population	Nueces		Jim Wells		Kleberg		San Patricio	
<b>Sex</b>								
Male	49%	42%	51%	44%	51%	44%	53%	43%
Female	51%	58%	49%	56%	49%	56%	47%	57%
<b>Race/Ethnicity</b>								
Non-Hispanic White	33%	23%	18%	13%	18%	13%	47%	36%
African American	4%	4%	2%	2%	2%	2%	4%	2%
Asian American	2%	2%	1%	1%	1%	1%	1%	0%
Native American	0%	0%	0%	0%	0%	0%	0%	0%
Multiple Races	1%	1%	0%	0%	0%	0%	1%	1%
Hispanic/Latino	60%	70%	78%	84%	78%	84%	47%	60%

Table 9 shows the projected population of adults living in Nueces County through 2050. The overall population is expected to increase by 41% by 2050 (from about 270,500 adults in 2017 to 382,500 in 2050), with the older adult population growing faster (59% increase) than other adult populations (38% increase). As a result, the need for behavioral health services for older adults may increase disproportionately to other age groups. In comparison, Jim Wells and San Patricio counties are also expected to see increases in the adult population, though much more moderately than in Nueces County. In contrast, the adult population of Kleberg County is expected to decrease through 2050 (for both adults and older adults).

**Table 9: Estimated Population of Adults in Nueces County – 2017 through 2050<sup>32</sup>**

Year	Adults Age 18 to 64		Adults Age 65 and Older		All Adults	
	Population	Percentage Change from 2017	Population	Percentage Change from 2017	Population	Percentage Change from 2017
<b>2017</b>	<b>222,414</b>		<b>48,084</b>		<b>270,498</b>	
2020	228,296	3%	52,973	10%	281,270	4%
2025	237,546	7%	60,707	26%	298,254	10%
2030	248,084	12%	66,447	38%	314,531	16%
2035	263,889	19%	67,895	41%	331,785	23%
2040	279,868	26%	69,410	44%	349,278	29%

<sup>32</sup> Estimated 2017 populations obtained from the 2017 American Community Survey population estimates. Projected population change was obtained from: Texas Demographic Center (2018). *Texas Population Projection Program – Age, Sex, and Race/Ethnicity (ASRE) Population [Excel file]*. Retrieved from: [demographics.texas.gov/Data/TPEPP/Projections/](https://demographics.texas.gov/Data/TPEPP/Projections/)

Year	Adults Age 18 to 64		Adults Age 65 and Older		All Adults	
	Population	Percentage Change from 2017	Population	Percentage Change from 2017	Population	Percentage Change from 2017
2045	294,862	33%	71,436	49%	366,298	35%
2050	305,862	38%	76,615	59%	382,477	41%

**Table 10: Estimated Population of Adults (Age 18 to 64) in Jim Wells, Kleberg, and San Patricio Counties – 2017 through 2050<sup>33</sup>**

Year	Jim Wells		Kleberg		San Patricio	
	Population	Percentage Change from 2017	Population	Percentage Change from 2017	Population	Percentage Change from 2017
<b>Adults Age 18 to 64</b>						
<b>2017</b>	<b>24,695</b>		<b>18,827</b>		<b>40,125</b>	
2020	24,563	-1%	18,794	0%	41,069	2%
2025	24,334	-1%	18,634	-1%	42,699	6%
2030	24,483	-1%	18,397	-2%	44,340	11%
2035	24,967	1%	17,932	-5%	46,541	16%
2040	25,360	3%	17,628	-6%	48,933	22%
2045	25,565	4%	17,613	-6%	50,900	27%
2050	25,282	2%	17,380	-8%	52,153	30%
<b>Adults Age 65 and Older</b>						
<b>2017</b>	<b>5,627</b>		<b>4,290</b>		<b>10,840</b>	
2020	6,026	7%	4,535	6%	11,831	9%
2025	6,602	17%	4,788	12%	13,047	20%
2030	6,819	21%	4,865	13%	13,903	28%
2035	6,689	19%	4,696	9%	13,860	28%
2040	6,449	15%	4,517	5%	13,430	24%
2045	6,200	10%	4,152	-3%	13,260	22%
2050	6,222	11%	4,010	-7%	13,611	26%

<sup>33</sup> Estimated 2017 populations obtained from the 2017 American Community Survey population estimates. Projected population change was obtained from: Texas Demographic Center (2018). *Texas Population Projection Program – Age, Sex, and Race/Ethnicity (ASRE) Population [Excel file]*. Retrieved from: [demographics.texas.gov/Data/TPEPP/Projections/](https://demographics.texas.gov/Data/TPEPP/Projections/)

Above, we include core demographic information. This next section provides an overview of the estimated current prevalence or need of different severities of behavioral health conditions as well as specific behavioral health conditions and disorders in Nueces and surrounding counties. Table 11 shows the estimated prevalence of mental health conditions among adults in Nueces and surrounding counties, whereas Table 12 shows the estimated prevalence of substance use disorders.

Overall, there are about 270,000 adults living in Nueces County. Slightly less than one quarter of adults in the region (about 65,000) are expected to have any mental illness. The vast majority of these adults living with mental illness (50,000) are expected to have conditions that are mild to moderate in severity, which can be treated in integrated primary care clinics.<sup>34</sup> The rest, between 10,000 to 15,000, are expected to be people with serious mental illness, more than half of whom (7,000) are living in poverty. These people have mental health conditions that would benefit from treatment in a specialized behavioral health setting, such as treatment provided in community clinics through the local mental health authority. Because of the smaller population sizes, estimates for Jim Wells, Kleberg, and San Patricio counties are much lower than those of Nueces County. We include those estimates in Table 11 for comparison.

The most serious cases of serious mental illness cause a level of impairment that leads to frequent use of crisis resources such as hospitals, emergency rooms, and jails. Often, these people can benefit from intensive outpatient practices such as Assertive Community Treatment (ACT). We estimate that in Nueces County, about 200 adults could benefit from ACT, half of whom may benefit from Forensic ACT because of their involvement in the criminal justice system. In our full report, we will assess and discuss in detail the services that have proven success in sustaining people in community and buffering against the use of emergency departments and jails.

As with children and youth, there are a comparatively small number of anticipated cases of first episode psychosis (FEP) among adults, though the number is larger than anticipated for children and youth.

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<sup>34</sup> MMHPI experts estimate that the proportion of the adult population with mental health needs who are best treated in integrated primary care settings is approximately equal to the proportion with mild or moderate severity. Although some portion of people with serious mental illness (e.g., people with major depression) can be effectively treated in integrated primary care, a proportion of people with moderate mental illness need care at specialty settings. These are offsetting factors and approximately cancel each other.



**Table 11: Twelve-Month Prevalence: Mental Health Disorders for Adults in Nueces and Surrounding Counties (2017)**

Mental Health Condition – Adults	Nueces County <sup>35</sup>	Jim Wells	Kleberg	San Patricio
<b>Total Adult Population</b>	<b>270,000</b>	<b>30,000</b>	<b>25,000</b>	<b>50,000</b>
Population in Poverty <sup>36</sup>	90,000	15,000	10,000	15,000
<b>All Mental Health Needs (Mild, Moderate, and Severe)<sup>37</sup></b>	<b>65,000</b>	<b>7,000</b>	<b>6,000</b>	<b>15,000</b>
Mild	25,000	3,000	2,000	5,000
Moderate	25,000	3,000	2,000	5,000
Severe – Serious Mental Illness (SMI) <sup>38</sup>	10,000	2,000	1,000	3,000
SMI in Poverty <sup>39</sup>	7,000	1,000	700	1,000
Complex Needs without Forensic Need (ACT) <sup>40</sup>	100	10	10	20
Complex Needs with Forensic Need (FACT) <sup>41</sup>	100	10	<10	20
<b>Specific Diagnoses</b>				
Major Depression <sup>42</sup>	20,000	2,000	2,000	4,000
Bipolar I Disorder <sup>43</sup>	1,000	200	100	300

<sup>35</sup> All Texas prevalence and population estimates are rounded to reflect uncertainty in the underlying American Community Survey population estimates. Because of this rounding process, row or column totals may not equal the sum of their rounded counterparts. Estimated values between 1 and 5 are rounded to “<6,” and estimated values between 5 and 9 are rounded to “<10.”

<sup>36</sup> “In poverty” refers to the estimated number of people below 200% of the federal poverty level for the specified region.

<sup>37</sup> Local prevalence estimates behavioral health needs across levels of severity are drawn from 12-month prevalence rates reported in Kessler, R. C., et al. (2005). Prevalence, severity, and comorbidity of twelve-month DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of Gen Psychiatry*, 62(6), 617–627.

<sup>38</sup> Local prevalence estimates of SMI are drawn from: Holzer, C., Nguyen, H., & Holzer, J. (2017). *Texas county-level estimates of the prevalence of severe mental health need in 2017*. Dallas, TX: Meadows Mental Health Policy Institute.

<sup>39</sup> “In poverty” refers to the estimated number of people below 200% of the federal poverty level for the specified region.

<sup>40</sup> Local prevalence estimates for the need for ACT are drawn from 12-month prevalence rates reported in Cuddeback, G. S., Morrissey, J. P., & Meyer, P. S. (2006). How many assertive community treatment teams do we need? *Psychiatric Services*, 57(12), 1803–1806

<sup>41</sup> Local prevalence estimates for the need for FACT are drawn from 12-month prevalence rates reported in Cuddeback, G. S., Morrissey, J. P., & Cusack, K. J. (2008). How many forensic assertive community treatment teams do we need? *Psychiatric Services*, 59, 205–208.

<sup>42</sup> Local prevalence estimates for major depression are drawn from 12-month prevalence rates reported from Holzer, C., Nguyen, H., & Holzer, J. (2017). *Texas county-level estimates of the prevalence of severe mental health need in 2017*. Dallas, TX: Meadows Mental Health Policy Institute.

<sup>43</sup> Local prevalence estimates for major depression are drawn from 12-month prevalence rates reported from Holzer, C., Nguyen, H., & Holzer, J. (2017). *Texas county-level estimates of the prevalence of severe mental health need in 2017*. Dallas, TX: Meadows Mental Health Policy Institute.

Mental Health Condition – Adults	Nueces County <sup>35</sup>	Jim Wells	Kleberg	San Patricio
Post-Traumatic Stress Disorder <sup>44</sup>	9,000	1,000	800	2,000
Schizophrenia <sup>45</sup>	1,000	200	100	300
First Episode Psychoses (FEP) Incidence – New Cases per Year (Ages 18–34) <sup>46</sup>	30	<6	<6	<6
Number of Deaths by Suicide <sup>47</sup>	48	10	<10	<10

As shown in Table 12, around 15,000 adults in Nueces County have substance use disorders (SUD), more than half of which (9,000) are expected to be among people living in poverty. About half of all SUD cases are also expected to be instances of co-occurring psychiatric and substance use disorders. In 2017, at least 77 adults died because of drug overdose, and at least 98 adults had alcohol-induced deaths. Statewide data from the national survey on drug use and health show that very few adults who need treatment for substance use disorders receive it (approximately 7%, using data from the National Survey on Drug Use and Health). However, we know that nearly half (46%) of all cases of SUD could be treated in an integrated primary care setting.<sup>48</sup>

Because the Nueces region is not expected to have substantial increases in population among young adults, current prevalence estimates may be a good indicator of need for years to come when planning for the future community need. However, as the demographics shift towards an older population, Nueces County may benefit from additional services that are designed to meet the needs of the older population. This may include addressing issues that lead to health inequities among older adults, such as transportation needs, mobility concerns, and isolation.

<sup>44</sup> Unless otherwise specified, local prevalence estimates of specific conditions are calculated from 12-month prevalence rates reported in Kessler, R. C., et al. (2005). Prevalence, severity, and comorbidity of twelve-month DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of Gen Psychiatry*, 62(6), 617–627.

<sup>45</sup> Local prevalence estimates for schizophrenia are drawn from 12-month prevalence rates reported in McGrath, J., et al. (2008). Schizophrenia: A concise overview of incidence, prevalence, and mortality. *Epidemiological Reviews*, 30, 67–76.

<sup>46</sup> Local incidence estimates for first episode psychosis are drawn from 12-month prevalence rates reported in Kirkbride, J. B., et al. (2017). The epidemiology of first-episode psychosis in early intervention in psychosis services: Findings from the Social Epidemiology of Psychoses in East Anglia [SEPEA] study. *American Journal of Psychiatry*, 174(2), 143–153.

<sup>47</sup> Death by suicide data obtained from Centers for Disease Control and Prevention, Underlying Cause of Death 1999–2017 on CDC WONDER Online Database. Suicide deaths are classified using underlying cause-of-death ICD-10 codes: X60–84 and Y87. In order to meet the CDC’s confidentiality restraints, counts of deaths of fewer than 10 are suppressed using values of “<10.”

<sup>48</sup> The estimated number of people with SUD who can be served in an integrated care setting was obtained from Madras, Bertha K. et al. (2008). Screening, brief interventions, referral to treatment (SBIRT) for illicit drug and alcohol use at multiple healthcare sites: Comparison at intake and 6 months later. *Drug & Alcohol Dependence*, 99(1), 280–295.

Because older adults often have more medical conditions, they may benefit from integrated health settings that can treat commonly co-occurring mental health and physical conditions.

**Table 12: Prevalence of Substance Use Disorders (SUD) Among Adults in Nueces and Surrounding Counties (2017)<sup>49,50</sup>**

Population	Nueces	Jim Wells	Kleberg	San Patricio
<b>Total Population</b>	<b>270,000</b>	<b>30,000</b>	<b>25,000</b>	<b>50,000</b>
Total Population in Poverty	90,000	15,000	10,000	15,000
<b>Any Substance Use Disorder</b>	<b>15,000</b>	<b>2,000</b>	<b>2,000</b>	<b>3,000</b>
SUD in Poverty <sup>51</sup>	9,000	1,000	1,000	2,000
Comorbid Psychiatric and SUD <sup>52,53</sup>	7,000	800	600	1,000
Needing but Not Receiving Treatment for Substance Use	15,000	2,000	1,000	3,000
<b>Alcohol-Related SUD</b>	<b>15,000</b>	<b>1,000</b>	<b>1,000</b>	<b>2,000</b>
Needing but Not Receiving Treatment for Alcohol Use	15,000	1,000	1,000	2,000
<b>Illicit Drug-Related SUD</b>	<b>6,000</b>	<b>700</b>	<b>500</b>	<b>1,000</b>
Needing but Not Receiving Treatment for Illicit Drug Use	5,000	600	500	1,000
<b>Number of Drug-Related Deaths in 2017<sup>54</sup></b>	<b>77</b>	<b>&lt;10</b>	<b>&lt;10</b>	<b>&lt;10</b>

<sup>49</sup> Unless otherwise specified, estimated prevalence of substance use disorders are based on prevalence rates drawn from the 2016–2017 National Survey on Drug Use and Health: Model-Based Prevalence Estimates – Texas.

<sup>50</sup> All Texas prevalence and population estimates are rounded to reflect uncertainty in the underlying American Community Survey population estimates. Because of this rounding process, row or column totals may not equal the sum of their rounded counterparts. Estimated values between 1 and 5 are rounded to “<6,” and estimated values between 5 and 9 are rounded to “<10.”

<sup>51</sup> The prevalence of any substance use disorder among adults and youth living in poverty is drawn from the national prevalence rate of alcohol or illicit drug dependence among those living at 199%, or less, of the federal poverty level according to results from the National Survey on Drug Use and Health, 2014.

<sup>52</sup> The local prevalence of co-occurring psychiatric and substance abuse disorders among adults are based on the intersection between the national prevalence rate of any mental illness and substance use disorder, as reported in SAMHSA’s 2018 *Behavioral Health Trends in the United States: Results from the 2017 National Survey on Drug Use and Health* (HHS Publication No. SMA 18-5068, NSDUH Series H-53) report and the 2016–2017 National Survey on Drug Use and Health (NSDUH) rates of SMI for Texas.

<sup>53</sup> The local prevalence of comorbid psychiatric and substance use disorders among youth ages 12–17 is based on intersection between the national prevalence rate of major depressive episodes and SUD, as reported in SAMHSA’s 2018 *Behavioral Health Trends in the United States: Results from the 2017 National Survey on Drug Use and Health* (HHS Publication No. SMA 18-5068, NSDUH Series H-53) report and the 2014–2016 National Survey on Drug Use and Health (NSDUH) sub-state rates of MDE for Texas.

<sup>54</sup> Death by drug overdose was data obtained from Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death 1999–2017 on CDC WONDER Online Database. Accessed

Population	Nueces	Jim Wells	Kleberg	San Patricio
Number of Alcohol-Induced Deaths in 2017 <sup>55</sup>	98	<10	<10	14

## Local Mental Health Authority (LMHA) Utilization

The tables below draw from data received from the Texas Health and Human Services Commission (HHSC) in February 2018. HHSC provided data on children and adults served by LMHAs in fiscal year (FY) 2017. In tables 13 and 16, we provide estimates of the number of children, youth, and adults who need care, broken out by the ideal care setting.

### Children and Youth

Table 13 below reports the total number of children and youth with any behavioral health need, with estimates of the number of children and youth who are best served in different care settings. The majority of youth with behavioral health needs can be met in an integrated care setting (15,000 of 25,000 total). About one in four children and youth need specialty care settings (6,000), including 3,000 with SED living in poverty who could benefit from care through the local mental health authority. Finally, about 2,000 (or 1 in 10) children and youth with behavioral health needs require rehabilitation or intensive care, including 300 with the most intensive needs who are at risk for out-of-home or out-of-school placement who require the most intensive services.

**Table 13: Children and Youth in Need by Care Setting (2017)**

Children and Youth – Community Care Need by Setting <sup>56</sup>	
Integrated Primary Care <sup>57</sup>	15,000
Specialty Behavioral Health Care <sup>58</sup>	6,000

at <http://wonder.cdc.gov/mcd-icd10.html>. Overdose deaths are classified using underlying cause-of-death ICD-10 codes: X40–44, X60–64, X85, and Y10–Y14.

<sup>55</sup> The number of alcohol-induced deaths were obtained from the Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death 1999–2017 on CDC WONDER Online Database. Accessed at <http://wonder.cdc.gov/mcd-icd10.html>. Alcohol induced deaths are classified using any underlying cause of death and multiple causes of death category, “alcohol-induced causes.” In order to meet the CDC’s confidentiality restraints, counts of deaths of fewer than 10 are suppressed using values of “<10.”

<sup>56</sup> All Texas prevalence and population estimates are rounded to reflect uncertainty in the underlying American Community Survey population estimates. Because of this rounding process, row or column totals may not equal the sum of their rounded counterparts. Estimated values between 1 and 5 are rounded to “<6,” and estimated values between 5 and 9 are rounded to “<10.”

<sup>57</sup> MMHPI estimates that approximately 2 out of every 3 children (64%) with mental health needs have conditions that can be successfully managed in an integrated primary care setting.

<sup>58</sup> MMHPI estimates that 1 out of 4 children with mental health needs requires specialty behavioral health care to adequately manage their condition.

<b>Children and Youth – Community Care Need by Setting<sup>56</sup></b>	
Children and Youth in Poverty Needing Specialty BH <sup>59</sup>	3,000
<b>Mental Health Rehabilitation/Intensive Care<sup>60</sup></b>	<b>2,000</b>
Intensive Services <sup>61</sup>	300

Tables 14 and 15 provide an overview of the number of children and youth served by the local mental health authority – Behavioral Health Center of Nueces County, including breakouts for the number served at each level of care (LOC). In comparison to the 3,000 children and youth in poverty who need specialty care, as reported above, 715 children and youth received ongoing care through the LMHA. Additionally, of the approximately 2,000 needing rehabilitation and intensive services, 34 received YES waiver and six received intensive family services through the LMHA.

These estimates indicate a large gap in care for children and youth with serious emotional disturbances (SED) who are living in poverty. The largest need is for rehabilitation and intensive services, but many children and youth with SED are also not receiving ongoing specialty outpatient care. To close this gap, it is important to incorporate the previous population growth estimates. Table 3 includes a 9% estimated growth rate in the population of children and youth by 2025. Absent other factors, the number of children and youth with SED is likely to grow at this same rate.

<sup>59</sup> This estimate is developed using the prevalence of children and youth with serious emotional disturbance who are also living in poverty.

<sup>60</sup> MMHPI estimates that 1 in 10 children with mental health needs require mental health rehabilitation and/or intensive care to adequately manage their conditions.

<sup>61</sup> These are the children and youth with conditions that cause enough impairment that they are at risk of out-of-home or out-of-school placement.

**Table 14: Children and Youth with SED in Poverty Who Were Served by the LMHA (FY 2017)<sup>62</sup>**

LMHA/Region	Total Child and Youth Population in Poverty <sup>63</sup>	Children and Youth with SED in Poverty <sup>64</sup>	Children and Youth Served in Ongoing Treatment <sup>65</sup>	Exact Percentage	Percentage Medicaid <sup>66</sup>
Behavioral Health Center of Nueces County	30,000	3,000	715	28%	91%

**Table 15: Children and Youth Levels of Care Analysis (FY 2017)<sup>67</sup>**

LMHA/ Region	Crisis Continuum		Ongoing TRR Treatment Levels				Specialized	
Levels of Care	Crisis	Transition	Medication Management	Targeted Services	Complex Services	Intensive Family	YES	Young Child
Behavioral Health Center of Nueces County	0	1	50	410	164	6	34	51
% by LOCs			7%	57%	23%	1%	5%	7%

## Adults

As shown in Table 16 below, most adult mental health need can be adequately met in an integrated care setting (50,000 adults of the 65,000 with any mental health need). Of the remaining adults who need care in a specialty setting, we estimate that about 7,000 with serious mental illness who are living in poverty would benefit from care through the local mental health authority. In contrast, just 2,362 adults received ongoing care through the LMHA, representing 34% of estimated need. The estimated population of adults in Nueces is expected to grow by 10% by 2025. The number of adults in need of ongoing specialty care is likely to grow proportionately.

<sup>62</sup> All Texas prevalence and population estimates are rounded to reflect uncertainty in the underlying American Community Survey population estimates. Because of this rounding process, row or column percentages or estimates may not equal the sum of their rounded counterparts. Estimated values between 1 and 5 are rounded to “<6,” and estimated values between 5 and 9 are rounded to “<10.”

<sup>63</sup> “In poverty” refers to the estimated number of people below 200% of the federal poverty level for the specified region.

<sup>64</sup> Local prevalence estimates of SED are drawn from Holzer, C., Nguyen, H., & Holzer, J. (2017). *Texas county-level estimates of the prevalence of severe mental health need in 2017*. Dallas, TX: Meadows Mental Health Policy Institute.

<sup>65</sup> Data in the “Children and Youth Served in Ongoing Treatment” column are the unduplicated number served by the LMHA across LOCs C1, C2, C3, and C4, as well as CY (YES Waiver) and CYC (Young Child Services).

<sup>66</sup> Percentage of children served by the LMHA who were receiving Medicaid during FY 2017. Data provided by DSHS (personal communication, February 26, 2018).

<sup>67</sup> Unduplicated utilization data across levels of care were obtained from Texas Health and Human Services Commission, February 2018, and reflect fiscal year 2017.

**Table 16: Adults in Need, by Care Setting (2017)**

<b>Adults – Community Care Need by Setting<sup>68</sup></b>	
<b>Adults with Mental Health Conditions<sup>69</sup></b>	<b>65,000</b>
<b>Need That Can Be Met in Integrated Care<sup>70</sup></b>	<b>50,000</b>
<b>Need That Requires Specialty Setting<sup>71</sup></b>	<b>10,000</b>
In Poverty Needing Specialty Care <sup>72</sup>	7,000
Complex Needs without Forensic Need (ACT) <sup>73</sup>	100
Complex Needs with Forensic Need (FACT) <sup>74</sup>	100
<b>Adults with Substance Use Disorders<sup>75</sup></b>	<b>15,000</b>
<b>Need That Can Be Met in Integrated Care<sup>76</sup></b>	<b>8,000</b>
<b>Need That Requires Specialty Setting<sup>77</sup></b>	<b>9,000</b>

<sup>68</sup> All Texas prevalence and population estimates are rounded to reflect uncertainty in the underlying American Community Survey population estimates. Because of this rounding process, row or column totals may not equal the sum of their rounded counterparts. Estimated values between 1 and 5 are rounded to “<6,” and estimated values between 5 and 9 are rounded to “<10.”

<sup>69</sup> Kessler, R. C., et al. (2012)a. Prevalence, persistence, and sociodemographic correlates of DSM-IV disorders in the National Comorbidity Survey Replication Adolescent Supplement. *Archives of General Psychiatry*, 69(4), 372–380, and Kessler, R. C., et al. (2012)b. Severity of 12-month DSM-IV disorders in the National Comorbidity Survey Replication Adolescent Supplement. *Archives of General Psychiatry*, 69(4), 381–389.

<sup>70</sup> The estimated percentage of adults with any mental illness who can be served in integrated care was based on estimates of mild and moderate need, obtained from Kessler, R. C., et al. (2012)b. Severity of 12-month DSM-IV disorders in the National Comorbidity Survey Replication Adolescent Supplement. *Archives of General Psychiatry*, 69(4), 381–389.

<sup>71</sup> The remaining people with any mental health condition who need more intensive treatment than what can be provided in an integrated care setting (these people are categorized as needing specialty care).

<sup>72</sup> The estimated population of people with SMI living in poverty. Estimated local prevalence of SMI is drawn from Holzer, C., Nguyen, H., & Holzer, J. (2017). *Texas county-level estimates of the prevalence of severe mental health need in 2017*. Dallas, TX: Meadows Mental Health Policy Institute.

<sup>73</sup> Local prevalence estimates for the need for ACT are drawn from 12-month prevalence rates reported in Cuddeback, G. S., Morrissey, J. P., & Meyer, P. S. (2006). How many assertive community treatment teams do we need? *Psychiatric Services*, 57(12), 1803–1806.

<sup>74</sup> Local prevalence estimates for the need for FACT are drawn from 12-month prevalence rates reported in Cuddeback, G. S., Morrissey, J. P., & Cusack, K. J. (2008). How many forensic assertive community treatment teams do we need? *Psychiatric Services*, 59, 205–208.

<sup>75</sup> Unless otherwise specified, estimated prevalence of substance use disorders are based on prevalence rates drawn from 2016–2017 National Survey on Drug Use and Health: Model-Based Prevalence Estimates – Texas.

<sup>76</sup> The estimated number of people with SUD who can be served in an integrated care setting was obtained from Madras, B. K. et al. (2008). Screening, brief interventions, referral to treatment (SBIRT) for illicit drug and alcohol use at multiple healthcare sites: Comparison at intake and 6 months later. *Drug & Alcohol Dependence*, 99(1), 280–295.

<sup>77</sup> This category represents the remaining people with any SUD who need more intensive treatment than what can be provided in an integrated care setting (these people are categorized as needing specialty care).



**Table 17: Number of Adults with SMI in Poverty Who Received Outpatient Services, by LMHA (FY 2017)<sup>78</sup>**

Adults	Behavioral Health Center of Nueces County
SMI in Poverty <sup>79,80</sup>	7,000
All LOCs Served	2,362
% in Need Served	34%

**Table 18: Adult Levels of Care Analysis (FY 2017)<sup>81</sup>**

LMHA/ Region	Crisis Continuum		Ongoing Treatment Levels					
Levels of Care	Crisis Response	Crisis Transition	Medication Management	Skills Training	Medications & Therapy	Team Based	ACT	Total Non-Crisis
Behavioral Health Center of Nueces County	245	210	1	2,046	18	257	40	2,362
% by LOCs			0%	87%	1%	11%	2%	

## The Emergency Department and Inpatient Crisis System

Access to high-quality community-based treatments for mental illness reduces the need for crisis services, including emergency department and inpatient psychiatric services. We were able to analyze utilization of services data for both of these settings based on discharge records we obtained from the Texas Health Care Information Collection (THCIC). THCIC comprises inpatient, emergency department, and outpatient discharge records for hospitals operating throughout Texas. Each discharge record included details on client age, length of stay, county of residence, charges (which reflect the nominal amount billed for each service), primary payer, and source of admission, among other variables.

<sup>78</sup> Utilization data were obtained from Texas Health and Human Services Commission, February 2018.

<sup>79</sup> Local prevalence estimates of SMI are drawn from Holzer, C., Nguyen, H., & Holzer, J. (2017). *Texas county-level estimates of the prevalence of severe mental health need in 2017*. Dallas, TX: Meadows Mental Health Policy Institute.

<sup>80</sup> All Texas prevalence and population estimates are rounded to reflect uncertainty in the underlying American Community Survey population estimates. Because of this rounding process, row or column percentages or estimates may not equal the sum of their rounded counterparts. Estimated values between 1 and 5 are rounded to "<6," and estimated values between 5 and 9 are rounded to "<10."

<sup>81</sup> Unduplicated utilization data across levels of care were obtained from Texas Health and Human Services Commission, February 2018, and reflect fiscal year 2017.



We used these THCIC discharge records to analyze psychiatric inpatient and emergency department utilization in Nueces County, as depicted in the data tables below. Although we obtained data from 2015 through the fourth quarter of calendar year (CY) 2018, the data in the tables are limited to a single full year of data – January to December of 2018 – with the exception of the daily psychiatric versus inpatient capacity data, which show all utilization going back to January 2016. A description of this source is also included in Appendix 2. We anticipate updating these data in the full report.

## Emergency Department Visits in Nueces County

Even in a community with an ideal array of integrated primary care, specialty care, and rehabilitation capacity, the emergency department (ED) will play an important role in helping with behavioral health crises. In systems without the full array of outpatient services, the ED takes on the less ideal and more frequent role of acting as the entry point to care for people with untreated behavioral health conditions.

This section provides an analysis of ED utilization resulting from primary psychiatric and substance use diagnoses. We also provide the primary payers and estimated payments associated with these visits.<sup>82</sup> This analysis can highlight sub-populations of adults who frequently utilize the ED, indicating a high need among a specific population or a lack of capacity to meet the needs of a specific population at lower levels of care. Of particular concern is the group of patients who either have Medicaid as their payer, pay for services themselves, rely on charity, or are uninsured. Admission of these patients in excessive numbers may reflect poor access to outpatient care by groups served by the public payers.

Because emergency departments are required to provide treatment, the characteristics of behavioral health patients seeking care at EDs are good indicators of those people in the community who experience behavioral health crises. We examine the distribution of ED patient's payer types, ages, and diagnoses, and contrast these with those of patients admitted to inpatient psychiatric facilities. This comparison and analysis will help us identify groups of patients in crisis who have limited access to inpatient beds.

There are 10 emergency departments that reported psychiatric and SUD-related emergency department visits to the THCIC: Bayview Behavioral Hospital, CHRISTUS Spohn – Corpus Christi, CHRISTUS Spohn Hospital – Corpus Christi Shoreline, CHRISTUS Spohn Corpus Christi – South, Corpus Christi Medical Center – Bay Area, Corpus Christi Medical Center – Doctors Regional, Corpus Christi Medical Center – Heart Hospital, Corpus Christi Medical Center – Northwest,

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<sup>82</sup> Each discharge record includes information on the expected primary source of payment associated with the visit. We grouped these into one of five categories for the purposes of this analysis: Medicaid, Medicare, Other Governmental Payer, Self-Pay, and Commercial Insurance.

Driscoll Children's Hospital, and South Texas Surgical Center. Corpus Christi Medical Center – Heart Hospital and South Texas Surgical Hospital each reported fewer than 10 psychiatric or SUD ED visits. Because of the small number of total visits, these EDs were included in total counts but not as separate breakouts in Table 19 below.

As Table 19 shows, CHRISTUS Spohn Hospital – Corpus Christi was the most frequently utilized ED for psychiatric visits (2,066 of 6,588 visits), but Corpus Christi Medical Center – Bay Area was more frequently utilized for ED visits related to SUD diagnoses (306 of 1,230 visits), based on data from 2018. For psychiatric ED visits, Bayview Behavioral Hospital and CHRISTUS Spohn Hospital Corpus Christi – Shoreline were also frequently used, but combined total visits for both (1,851) were still fewer than the count of visits to CHRISTUS Spohn – Corpus Christi. Aside from the Heart Hospital and South Texas Surgical Hospital, Corpus Christi Medical Center – Northwest had the fewest psychiatric ED visits, whereas Driscoll Children's Hospital had the fewest SUD-related ED visits. Across all EDs, there were more than five times as many ED visits for primary psychiatric conditions than there were for substance use conditions. This ratio is consistent with the prevalence data presented in tables 15 and 16, suggesting that mental health conditions are nearly five times as prevalent as substance use disorders in Nueces County.

Some differences in the proportion of primary payer types listed for each hospital are notable. These are based on each discharge record's primary payer source, as reported by the hospital. Because in past systems assessments we have encountered some mis-coding of payer type on discharge records, we encourage hospitals to confirm these results. Table 19 shows that, overall, people visiting EDs for psychiatric disorders are more likely to be funded through Medicaid (30%) or Medicare (21%) than are people visiting for SUD (22% Medicaid, 13% Medicare). Emergency department visits for substance use disorders are more likely to be self-funded (47%) than are visits for psychiatric conditions (27%). This contrast was most apparent at Corpus Christi Medical Center – Northwest, where 60% of SUD-related ED visits were self-funded in comparison to 35% of psychiatric ED visits being self-funded.

Across all hospitals, SUD-related ED visits and psychiatric-related ED visits were funded through commercial insurance in approximately equal proportions. However, at Bayview Behavioral Hospital, SUD-related visits were more often funded through commercial insurance (25%) than were psychiatric-related ED visits (17%). At CHRISTUS Spohn – Corpus Christi, the reverse was true: 19% of psychiatric-related visits were funded through commercial insurance compared to only 11% of SUD-related ED visits. CHRISTUS Spohn – Corpus Christi has the largest proportion of self-pay behavioral health patients (31% of psychiatric visits and 52% of SUD visits) and may experience financial challenges serving this group of patients.

**Table 19: Emergency Department Inpatient and Outpatient Psychiatric Visits, by Visit Type and Payer – All Ages (CY 2018)**

Hospital	Total Number of ED Visits <sup>83</sup>	Payer Percentage <sup>84</sup>				
		Medicaid	Medicare	Other Government	Self-Pay	Commercial Insurance
Bayview Behavioral Hospital						
Psychiatric Diagnoses	929	29%	20%	11%	21%	17%
Substance Use Diagnoses	64	14%	19%	2%	38%	25%
CHRISTUS Spohn – Corpus Christi						
Psychiatric Diagnoses	2,066	27%	21%	3%	31%	19%
Substance Use Diagnoses	130	28%	6%	2%	52%	11%
CHRISTUS Spohn Hospital Corpus Christi – Shoreline						
Psychiatric Diagnoses	922	32%	22%	2%	31%	13%
Substance Use Diagnoses	278	28%	10%	3%	43%	15%
CHRISTUS Spohn Hospital Corpus Christi – South						
Psychiatric Diagnoses	584	29%	15%	4%	26%	26%
Substance Use Diagnoses	107	24%	7%	5%	38%	25%
Corpus Christi Medical Center – Bay Area						
Psychiatric Diagnoses	646	19%	27%	3%	30%	19%
Substance Use Diagnoses	306	14%	15%	1%	49%	21%
Corpus Christi Medical Center – Doctors Regional						
Psychiatric Diagnoses	553	21%	36%	3%	27%	12%
Substance Use Diagnoses	174	20%	23%	1%	50%	6%
Corpus Christi Medical Center – Northwest						
Psychiatric Diagnoses	399	21%	25%	1%	35%	18%
Substance Use Diagnoses	128	17%	10%	1%	60%	9%
Driscoll Children’s Hospital						
Psychiatric Diagnoses	477	70%	0%	2%	6%	22%
Substance Use Diagnoses	36	61%	0%	0%	17%	22%
All Psychiatric ED Visits	6,588	30%	21%	4%	27%	18%
All Substance Use ED Visits	1,230	22%	13%	2%	47%	16%

<sup>83</sup> Hospitals with a handful of behavioral health visits are not included. These hospitals were South Texas Surgical Hospital (five visits), and Corpus Christi Medical Center – Heart Hospital (14 visits).

<sup>84</sup> Forty-two (42) visits to EDs in Nueces County had an unknown payer.

### Suicide-Related ED Visits / Co-Occurring and SUD-Related ED Visits

As reported in Table 20, nearly 800 suicide-related ED visits occurred between January and December 2018, representing about 10% of all behavioral health ED visits. Most of these (424) were among adults between the ages of 18 and 64, followed by youth (298) between the ages of 12 and 17. Older adults and children had smaller counts of suicide-related ED visits (fewer than 20 among each age group).

Applying national rates to the Nueces County population, we estimate 3,000 youth engage in self-harm behavior. As such, about 10% of youth who engaged in self-harm behavior end up in the ED. Fewer than 10 youth completed suicide in 2017, which is less than 4% of the number of suicide-related ED visits for youth. Our estimate of self-harm is based on applying a national rate; however, the ED data represent counts of actual events. As such, we recommend monitoring the frequency of youth and adult suicide-related ED visits as a metric for evaluating the severity of self-harm behavior in Nueces County as well as an outcome measure for any suicide prevention programs.

Forty-eight adults completed suicide in Nueces County in 2017, which accounts for over 11% of the 2018 adult suicide-related ED visits. Among adults with suicide-related ED visits, 20% also had an SUD diagnosis (compared to 11% of older adults and 12% of youth). The frequency of suicide-related ED visits for people with substance use disorders suggests a potential gap in care for SUD treatment programs.

Forty-six percent of adults visiting CHRISTUS Spohn – Corpus Christi and 28% of adults visiting Driscoll Children’s Hospital had an SUD diagnosis, compared to just 9% at Corpus Christi Medical Center – Doctors Regional and 8% at CHRISTUS Spohn Corpus Christi – South.

**Table 20: Suicide and Substance-Related Emergency Department Visits by Age (CY 2018)**

Population	Suicide-Related Visits	% with SUD Diagnosis
<b>Adults (Age 18 to 64)</b>	<b>424</b>	<b>20%</b>
CHRISTUS Spohn – Corpus Christi	79	46%
CHRISTUS Spohn Hospital Corpus Christi – Shoreline	197	14%
CHRISTUS Spohn Hospital Corpus Christi – South	36	8%
Driscoll Children’s Hospital	16	38%
Corpus Christi Medical Center – Bay Area	47	21%
Corpus Christi Medical Center – Doctors Regional	34	9%
Corpus Christi Medical Center – Heart Hospital	1	0%
Corpus Christi Medical Center – Northwest	14	0%

Population	Suicide-Related Visits	% with SUD Diagnosis
<b>Older Adults (Age 65 and Older)</b>	<b>19</b>	<b>11%</b>
CHRISTUS Spohn – Corpus Christi	4	25%
CHRISTUS Spohn Hospital Corpus Christi – Shoreline	10	10%
CHRISTUS Spohn Hospital Corpus Christi – South	4	0%
Corpus Christi Medical Center – Bay Area	1	0%
<b>Youth (Age 12 to 17)</b>	<b>298</b>	<b>12%</b>
CHRISTUS Spohn – Corpus Christi	2	0%
CHRISTUS Spohn Hospital Corpus Christi – Shoreline	11	0%
CHRISTUS Spohn Hospital Corpus Christi – South	13	0%
Driscoll Children’s Hospital	251	14%
Corpus Christi Medical Center – Bay Area	14	7%
Corpus Christi Medical Center-Doctors – Regional	4	0%
Corpus Christi Medical Center – Northwest	3	0%
<b>Children (Age 0 to 11)</b>	<b>18</b>	<b>0%</b>
Driscoll Children’s Hospital	18	0%
<b>Total ED Visits</b>	<b>759</b>	<b>16%</b>

Table 21 reports ED visits for primary psychiatric or substance use diagnoses (separately), with sub-breakouts of secondary SUD or psychiatric diagnoses. Among those people with primary psychiatric diagnoses who visited the ED, about 25% (1,679) had a secondary SUD diagnosis. Among those with primary SUD ED visits, 419 (34%) had a secondary psychiatric diagnosis. These high rates of ED visits for co-occurring psychiatric and substance use disorders highlight the need for outpatient treatment programs that integrate treatment for co-occurring disorders.

In a later section, Table 32 reports inpatient visits for primary psychiatric or substance use diagnosis. When contrasted to Table 32, Table 21 shows that people visiting the ED for primary SUD diagnoses have secondary psychiatric diagnoses at lower frequencies than people receiving inpatient psychiatric care for primary SUD. This finding is consistent with hospitalizing only those people with more severe conditions, such as co-occurring psychiatric and SUD. It also emphasizes that people with multiple, complex needs will have high rates of both ED and inpatient use if they are not treated successfully in the community.

**Table 21: Nueces Emergency Department (ED) Visits with Co-Occurring Psychiatric and Substance Use Disorders – All Ages (CY 2018)**

Hospital of Admission	Primary Psychiatric Diagnosis		Primary Substance Use Diagnosis	
	ED Visits	Visits with Secondary SUD Diagnoses	ED Visits	Visits with Secondary Psychiatric Diagnoses
<b>All Admissions to Local EDs</b>	<b>6,588</b>	<b>1,679</b>	<b>1,230</b>	<b>419</b>
CHRISTUS Spohn – Corpus Christi	2,066	887	130	69
CHRISTUS Spohn Hospital Corpus Christi – Shoreline	922	140	278	95
CHRISTUS Spohn Hospital Corpus Christi – South	584	36	107	30
Driscoll Children’s Hospital	477	45	36	18
Corpus Christi Medical Center – Bay Area	646	81	306	75
Corpus Christi Medical Center – Doctors Regional	553	61	174	49
Corpus Christi Medical Center – Heart Hospital	9	2	5	3
Bayview Behavioral Hospital	929	399	64	54
Corpus Christi Medical Center – Northwest	399	28	128	26
South Texas Surgical Hospital	3	N/A	2	N/A

### Co-Morbid Health Conditions and Emergency Department Visits

Some primary physical health conditions result in ED visits more often when a person has secondary psychiatric or substance use disorders. Table 22 below reports the top physical health ED visits among people with secondary behavioral health disorders. Pain in the throat/chest was the most common primary physical condition among people with secondary psychiatric, SUD, and co-occurring psychiatric and substance use disorders (COPSD). Abdominal pain and sepsis were also frequent across all categories. However, among people with secondary SUD diagnoses, but not among those with secondary psychiatric diagnoses, alcoholic liver disease, nausea and vomiting, open head wounds, and heart attacks were in the top 10 primary physical health conditions leading to ED visits. People with secondary psychiatric diagnoses frequented the ED for COPD, type 2 diabetes, urinary disorder, and headaches more often than people with SUD. People with secondary COPSD frequented the ED for acute pancreatitis, epilepsy, and skull or facial fractures more often than those with secondary psychiatric or SUD alone.

Many of these comorbid medical conditions, such as chronic pain, sepsis, and diabetes, reflect conditions best treated in integrated primary care or specialty care settings. The high levels of people with behavioral health conditions visiting the ED for these comorbid medical conditions may reflect a lack of access to integrated primary and behavioral care. The data in Table 22

provide a magnitude of the potentially avoidable ED visits in Nueces County with the implementation of integrated care.

**Table 22: Medical Emergency Department (ED Visits) in Nueces County with Co-Occurring Psychiatric and Substance Use Disorders (COPSD) – All Ages (CY 2018)**

Rank	Primary Physical Health Diagnoses with the Most Secondary Psychiatric Diagnoses		Primary Physical Health Diagnoses with the Most Secondary SUD Diagnoses		Primary Physical Health Diagnoses with the Most COPSD Diagnoses	
	Top Physical Health Diagnoses	Visits	Top Physical Health Diagnoses	Visits	Top Physical Health Diagnoses	Visits
1	Throat/Chest Pain	1,171	Throat/Chest Pain	250	Throat/Chest Pain	97
2	Abdominal/Pelvic Pain	820	Other Sepsis	164	Abdominal/Pelvic Pain	69
3	Dorsalgia	441	Abdominal/Pelvic Pain	124	Other Sepsis	45
4	Other Sepsis	386	Cellulitis/Acute Lymphangitis	123	Cellulitis/Acute Lymphangitis	33
5	Other Disorders of the Urinary System	314	Cutaneous Abscess	97	Cutaneous Abscess	33
6	Other COPD	263	Nausea/Vomiting	81	Epilepsy/Seizures	26
7	Other Joint Disorder	257	Alcoholic Liver Disease	81	Acute Pancreatitis	24
8	Headache	253	Open Head Wound	77	Skull/Facial Fracture	22
9	Cellulitis/Acute Lymphangitis	234	Acute Pancreatitis	69	Narcotics and Psychodysleptics	22
10	Type 2 Diabetes	234	Heart Attack	69	Open Head Wound	21

## Inpatient Admissions from Nueces County Emergency Departments

Inpatient hospitalization is best provided in a patient's local community. Local care improves access for the patient's family and support group and helps the patient integrate back into the community and engage with community-based services. In the next set of maps and data tables, we focus on admissions from Nueces County emergency departments (ED) to an inpatient psychiatric bed anywhere in Texas, showing how patients are separated from their communities to receive inpatient care. We identify these types of admissions by determining, for every psychiatric bed admission, whether a patient had been in a Nueces County ED on the same or previous day. County of residence of the patient did not play a role in this analysis.

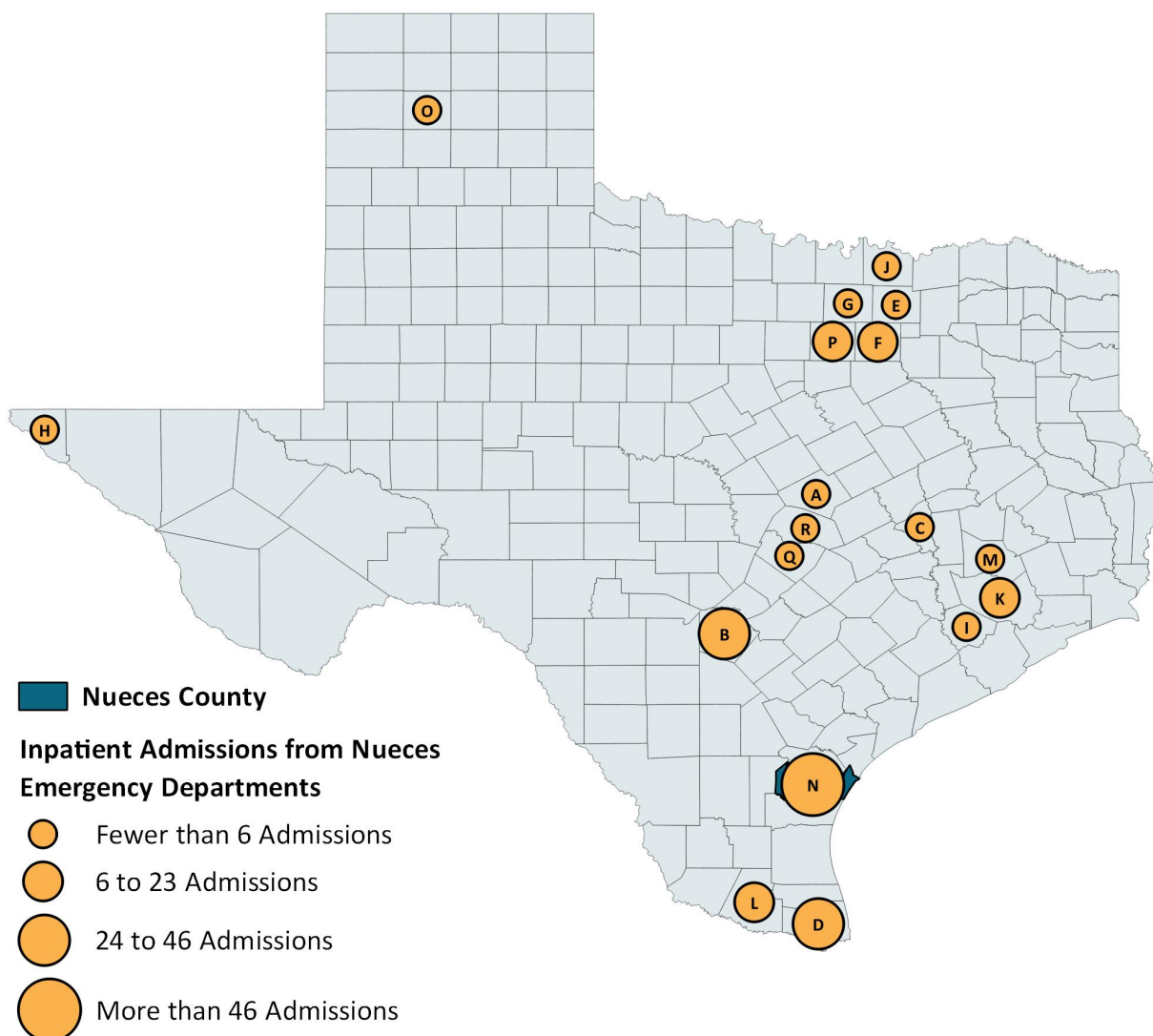
There are reasons for large geographic separations between EDs and inpatient facilities, including behavioral health crises that occur during travel and the provision of specialized inpatient behavioral treatment such as competency restoration at a state hospital. Geographic gaps of concern are those that only occur for specific payers (such as sending self-pay patients to distant hospitals) or specific age groups (no youth beds), or because of insufficient local beds in total.

Map 6 and Table 23, below, show the number of patients sent from these EDs to psychiatric beds across Texas. Table 24 provides payer details. Figure 1 and Table 25 reports the lengths of stay among people receiving inpatient care from a Nueces County ED. Of 418 admissions to psychiatric hospitals from Nueces County EDs, most (245, 59%) were sent to local Nueces County beds, whereas 173 (41%) were sent to hospitals in other counties.

Most hospitals in other counties that patients from Nueces County EDs were specialized behavioral health facilities. With the exception of Palms Behavioral Health in Cameron County, no single facility took a significant number of patients from Nueces County EDs, which might occur if a multilocation hospital system sent all behavioral health patients to a single location. A similar proportion of adults and youth were sent to out-of-county psychiatric beds, indicating that neither type of local bed was disproportionately available to local EDs.



**Map 6: Admissions to Psychiatric Hospitals from Nueces County Emergency Departments – All Ages (CY 2018)**



**Table 23: Admissions to Psychiatric Hospitals from Nueces County Emergency Departments, by Age (CY 2018)**

Map Label	County and Hospital of Admission	Total Admissions	Adults (Age 18 to 64)	Older Adults (Age 65 and Older)	Youth (Age 12 to 17)
<b>A</b>	<b>Bell</b>	<b>2</b>	<b>1</b>	<b>N/A</b>	<b>1</b>
	Cedar Crest Hospital	1	N/A	N/A	1
	Scott & White Medical Center Temple	1	1	N/A	N/A
<b>B</b>	<b>Bexar</b>	<b>44</b>	<b>31</b>	<b>2</b>	<b>7</b>
	Clarity Child Guidance Center	4	N/A	N/A	3

Map Label	County and Hospital of Admission	Total Admissions	Adults (Age 18 to 64)	Older Adults (Age 65 and Older)	Youth (Age 12 to 17)
	Laurel Ridge Treatment Center	20	14	N/A	3
	Methodist Specialty & Transplant Hospital	11	11	N/A	N/A
	Nix Behavioral Health Center	1	1	N/A	N/A
	Nix Health Care System	4	2	2	
	Nix Specialty Health Center	1	1	N/A	N/A
	San Antonio Behavioral Healthcare Hospital	3	2	N/A	1
<b>C</b>	<b>Brazos – Rock Prairie Behavioral Health</b>	<b>3</b>	<b>1</b>	<b>N/A</b>	<b>2</b>
<b>D</b>	<b>Cameron – Palms Behavioral Health</b>	<b>46</b>	<b>30</b>	<b>4</b>	<b>12</b>
<b>E</b>	<b>Collin</b>	<b>3</b>	<b>2</b>	<b>N/A</b>	<b>1</b>
	Columbia Medical Center-McKinney	1	1	N/A	N/A
	Texas Health Seay Behavioral Health Center	2	1	N/A	1
<b>F</b>	<b>Dallas</b>	<b>11</b>	<b>5</b>	<b>N/A</b>	<b>5</b>
	Dallas Behavioral Healthcare Hospital	4	1	N/A	2
	Green Oaks Hospital	2	N/A	N/A	2
	Methodist Richardson Medical Center	2	2	N/A	
	Sundance Hospital Dallas	3	2	N/A	1
<b>G</b>	<b>Denton – University Behavioral Health-Denton</b>	<b>2</b>	<b>1</b>	<b>N/A</b>	<b>1</b>
<b>H</b>	<b>El Paso – El Paso Behavioral Health System</b>	<b>3</b>	<b>N/A</b>	<b>N/A</b>	<b>2</b>
<b>I</b>	<b>Fort Bend – Westpark Springs</b>	<b>2</b>	<b>N/A</b>	<b>N/A</b>	<b>2</b>
<b>J</b>	<b>Grayson – Texoma Medical Center</b>	<b>3</b>	<b>2</b>	<b>N/A</b>	<b>1</b>
<b>K</b>	<b>Harris</b>	<b>11</b>	<b>2</b>	<b>2</b>	<b>6</b>
	Behavioral Hospital – Bellaire	2	N/A	N/A	2
	Cypress Creek Hospital	1	N/A	N/A	1
	Houston Behavioral Healthcare Hospital	1	N/A	N/A	1
	Kingwood Pines Hospital	1	N/A	N/A	
	Oceans Behavioral Hospital of Katy	2	N/A	2	N/A
	St Joseph Medical Center	1	1	N/A	

Map Label	County and Hospital of Admission	Total Admissions	Adults (Age 18 to 64)	Older Adults (Age 65 and Older)	Youth (Age 12 to 17)
	Sun Behavioral Houston	2	1	N/A	1
	West Oaks Hospital	1	N/A	N/A	1
<b>L</b>	<b>Hidalgo – McAllen Medical Center</b>	<b>23</b>	<b>15</b>	<b>1</b>	<b>5</b>
<b>M</b>	<b>Montgomery – Aspire Hospital</b>	<b>1</b>	<b>1</b>	<b>N/A</b>	<b>N/A</b>
<b>N</b>	<b>Nueces</b>	<b>245</b>	<b>140</b>	<b>18</b>	<b>81</b>
	Bayview Behavioral Hospital	131	42	2	81
	CHRISTUS Spohn – Corpus Christi	114	98	16	N/A
<b>O</b>	<b>Potter – Northwest Texas Hospital</b>	<b>1</b>	<b>1</b>	<b>N/A</b>	<b>N/A</b>
<b>P</b>	<b>Tarrant</b>	<b>10</b>	<b>4</b>	<b>N/A</b>	<b>6</b>
	John Peter Smith Hospital	1	1	N/A	N/A
	Mesa Springs	2	N/A	N/A	2
	Millwood Hospital	4	N/A	N/A	4
	Texas Health Arlington Memorial Hospital	2	2	N/A	N/A
	Texas Health Springwood Hospital	1	1	N/A	N/A
<b>Q</b>	<b>Travis</b>	<b>5</b>	<b>4</b>	<b>N/A</b>	<b>1</b>
	Austin Lakes Hospital	1	1	N/A	N/A
	Austin Oaks Hospital	1	1	N/A	N/A
	Seton Shoal Creek Hospital	2	1	N/A	1
	Texas NeuroRehab Center	1	1	N/A	N/A
<b>R</b>	<b>Williamson – Georgetown Behavioral Health Institute</b>	<b>3</b>	<b>1</b>	<b>N/A</b>	<b>2</b>
<b>Total Admissions</b>		<b>418</b>	<b>241</b>	<b>27</b>	<b>135</b>
<b>Total Admissions to Nueces Hospitals</b>		<b>245</b>	<b>140</b>	<b>18</b>	<b>81</b>
<b>Total Admissions to Non-Local Hospitals</b>		<b>173</b>	<b>101</b>	<b>9</b>	<b>54</b>

Table 24 shows the primary payer associated with psychiatric hospitalizations from Nueces County EDs, with breakouts showing local versus non-local psychiatric hospitals. People who were sent to hospitals from Nueces County EDs were sent to non-local beds more often if they were funded through commercial insurance, as compared to patients sent to local hospitals. This variation reflects the larger range of hospital choices available to patients with commercial patients, but it does not necessarily reflect reduced access to quality care for other payer types.

In contrast, people who are self-funded or funded through Medicaid were generally more often sent to local psychiatric hospitals. As shown in Table 29, this trend was also generally true among people admitted to local psychiatric hospitals as compared to people sent to non-local hospitals; patients were usually funded through Medicaid and self-pay if they were sent to local hospitals. However, this pattern does not hold for every hospital. For example, at Corpus Christi Medical Center – Northwest, no self-funded patients were sent to local beds. This pattern of sending self-funded patients from this ED to more distant inpatient facilities may reflect a problem between the ED and the local hospitals providing charity care.

As reported in Table 24, below, 13% of people who were admitted to a psychiatric bed from a Nueces County ED were self-funded, 21% were funded through Medicare, and about 33% were funded through commercial insurance. In contrast, among all psychiatric ED visits as reported in Table 19, a higher proportion of people were self-funded (27%) or had Medicare (21%), and only 18% were funded through commercial insurance. People who were self-funded or funded through Medicare appeared less likely to receive inpatient care after visiting an ED, whereas people with commercial insurance were more likely to receive care. This pattern suggests a lack of access for self-pay and Medicaid patients.

**Table 24: Admissions to Psychiatric Hospitals from Nueces Emergency Departments, All Ages by Payer (CY 2018)**

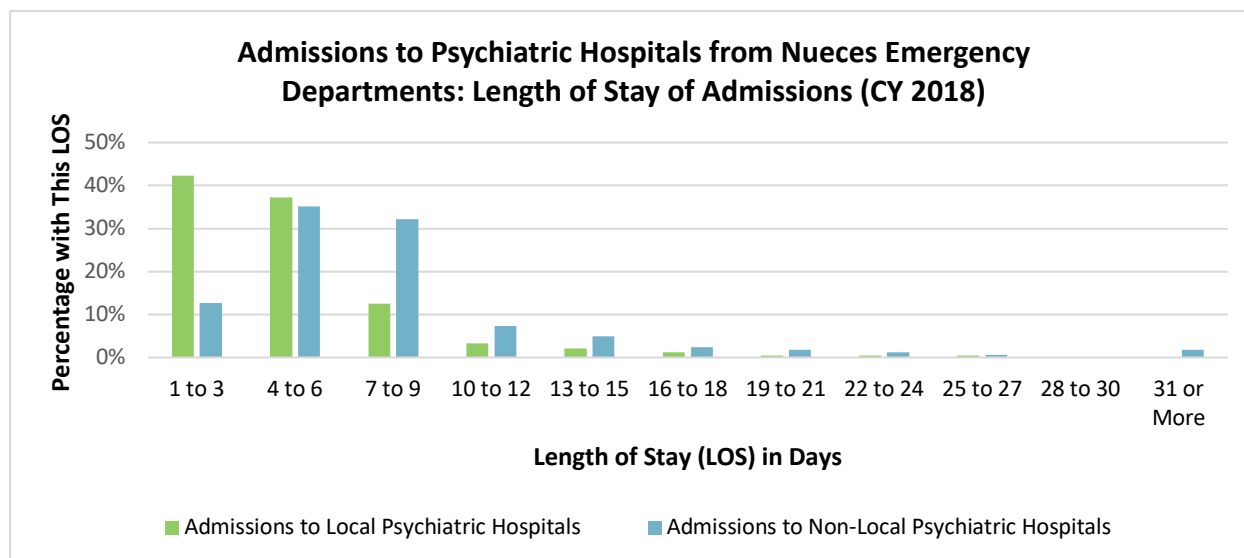
Admissions from Nueces EDs to Psychiatric Beds <sup>85</sup>	Total Admissions	Medicaid	Medicare	Other Government	Self-Pay	Commercial Insurance
<b>Total Admissions from Nueces EDs</b>	<b>418</b>	<b>32%</b>	<b>13%</b>	<b>8%</b>	<b>13%</b>	<b>33%</b>
to Non-Local Psychiatric Bed	173	23%	15%	5%	6%	50%
to Local Psychiatric Bed	245	38%	12%	10%	18%	21%
<b>CHRISTUS Spohn – Corpus Christi ED</b>						
to Non-Local Psychiatric Bed	11	9%	27%	9%	0%	55%
to Local Psychiatric Bed	15	20%	27%	0%	27%	27%
<b>CHRISTUS Spohn Hospital Corpus Christi – Shoreline ED</b>						
to Non-Local Psychiatric Bed	12	25%	17%	0%	8%	50%
to Local Psychiatric Bed	79	29%	15%	9%	28%	19%

<sup>85</sup> EDs with fewer than 10 visits resulting in a psychiatric inpatient admission were included in the count of “all admissions,” but were not included in ED-specific breakouts. These included Bayview Behavioral Hospital ED (seven visits) and Corpus Christi Medical Center – Heart Hospital ED (two visits).

Admissions from Nueces EDs to Psychiatric Beds <sup>85</sup>	Total Admissions	Medicaid	Medicare	Other Government	Self-Pay	Commercial Insurance
<b>CHRISTUS Spohn Hospital Corpus Christi – South ED</b>						
to Non-Local Psychiatric Bed	9	11%	33%	11%	0%	44%
to Local Psychiatric Bed	22	23%	23%	5%	23%	27%
<b>Corpus Christi Medical Center – Bay Area ED</b>						
to Non-Local Psychiatric Bed	43	14%	12%	0%	14%	58%
to Local Psychiatric Bed	17	18%	35%	6%	24%	18%
<b>Corpus Christi Medical Center – Doctors Regional ED</b>						
to Non-Local Psychiatric Bed	31	19%	29%	3%	3%	45%
to Local Psychiatric Bed	24	4%	4%	67%	21%	0%
<b>Corpus Christi Medical Center – Northwest ED</b>						
to Non-Local Psychiatric Bed	21	24%	19%	10%	10%	38%
to Local Psychiatric Bed	4	25%	25%	0%	0%	50%
<b>Driscoll Children’s Hospital ED</b>						
to Non-Local Psychiatric Bed	39	33%	0%	8%	3%	56%
to Local Psychiatric Bed	82	70%	0%	0%	5%	26%

Furthermore, our comparison of length of stay between patients sent by EDs to local versus non-local inpatient facilities revealed notable differences. As shown in Figure 1 and Table 25, people who were sent from Nueces County EDs to psychiatric beds averaged longer lengths of stay (four to nine days) when they were sent to non-local hospitals, compared to patients sent to local hospitals, who usually had lengths of stay of less than one week. Longer lengths of stay for patients who are sent to distant hospitals exacerbate problems in involving family and other supports in treatment. In the case of some admissions, this may be an unfortunate but necessary consequence of needing highly specialized services and facilities such as state hospital admissions for competency restoration. But it may also reflect a lack of local skilled nursing facilities, forcing patients needing longer periods of care to be sent far from their natural supports.

**Figure 1: Admissions to Psychiatric Beds from all Nueces EDs – Length of Stay Details (CY 2018)**



**Table 25: Data Associated with Figure 1 (Length of Stay of Admissions from Nueces EDs to Psychiatric Beds) (CY 2018)**

Admissions from Nueces EDs to Psychiatric Beds				
Length of Stay in Days	Total Admissions from Nueces EDs	Percentage Admitted to Local Hospitals	Percentage Admitted to Non-Local Hospitals	Percentage Admitted to All Hospitals
1 to 3 Days	122	42%	13%	30%
4 to 6 Days	147	37%	35%	36%
7 to 9 Days	83	13%	32%	21%
10 to 12 Days	20	3%	7%	5%
13 to 15 Days	13	2%	5%	3%
16 to 18 Days	7	1%	2%	2%
19 to 21 Days	4	<1%	2%	1%
22 to 24 Days	3	<1%	1%	1%
25 to 27 Days	2	<1%	1%	<1%
28 to 30 Days	N/A	N/A	N/A	N/A
31 to 60 Days	3	<1%	2%	1%

In summary, examining the flow of patients from local EDs to inpatient psychiatric beds statewide revealed anticipated patterns. These patterns included most patients being sent to local beds and some patients being admitted to non-local hospital beds as a result of

idiosyncratic patient characteristics, such as people experiencing a behavioral health crisis while traveling. However, we did identify several potential issues of concern:

- Palms Behavioral Health in Cameron County received several patients from local EDs. Given Palms Behavioral Health's distance from Nueces County, further investigation is warranted to determine whether these patients would be better served locally.
- Corpus Christi Medical Center – Northwest did not send any self-funded patients to local inpatient hospitals. This hospital had a small number of admissions to inpatient beds anywhere, which may explain this pattern.
- As compared to all ED behavioral health visits, self-funded patients were less likely to be admitted to a psychiatric bed. This variance likely reflects reduced bed availability for patients without a payer.

## Psychiatric Bed Capacity and Utilization

In the previous section, we examined the flow of patients from local EDs to inpatient beds. We now analyze inpatient bed use by all Nueces County residents as well as the bed capacity and use of Nueces County inpatient psychiatric beds by residents of all counties. Our analysis focuses on two issues: identifying whether sufficient beds exist locally to serve all the needs of Nueces County residents and assessing the impact that insufficient community-based outpatient services capacity has on bed use. Please see Appendix 2 for a description of the sources we used for this analysis.

## Nueces County Psychiatric Hospital Utilization

Two hospitals in Nueces County reported inpatient psychiatric utilization: Bayview Behavioral Hospital and CHRISTUS Spohn – Corpus Christi. In our community assessments we are often asked whether a community has sufficient inpatient capacity. There is no formula that can simply address this question and answering it depends on multiple factors (service array, existing capacity). The next section takes three approaches to assess this capacity question. The first approach, as presented in Table 26, subdivides patients admitted to psychiatric beds by payer type and age group. Disproportionate use of beds by patients with commercial insurance may indicate a lack of access for self-pay or lower paying Medicaid patients. Excessive bed use by self-pay or Medicaid patients may indicate that local hospitals may have potential financing challenges for psychiatric beds.

The second approach, presented in Table 27, analyzes the county of residence of patients admitted to psychiatric beds in Nueces County. This analysis can highlight another facet of bed capacity: many patients residing in distant counties likely use Nueces County psychiatric beds because the county has available beds. In a related analysis, we examine the use of non-Nueces psychiatric beds by residents of Nueces County. If the flow of patients out of the county is substantially greater than the flow in, there may be a lack of local beds.

Finally, we use Table 30 and figures 2–5 to compare, for each hospital, daily inpatient utilization relative to reported staffed bed capacity. This approach may identify hospitals that are operating beyond capacity or under capacity relative to need. Prolonged operation at or above capacity may indicate insufficient capacity to meet need. Additionally, the time series graphs (figures 2–5) are useful for identifying whether periods at full capacity are only seasonal or reflect long-term trends.

Table 26 shows admissions to Nueces County psychiatric beds, by age group and by payer. In aggregate across the two hospitals, the predominant payer for older adults was Medicare, whereas for children and youth, it was Medicaid. Adults have a broader range of payers, with a significant portion categorized as self-pay. In many cases, “self-pay” corresponds to adults in poverty who had no way to pay for hospitalization.

Among the hospitals, a higher proportion of admissions to CHRISTUS Spohn – Corpus Christi were self-pay (28%) or paid by commercial insurance (24%), compared to 16% of admissions to Bayview Behavioral Hospital that were self-pay and 19% paid for by commercial insurance. More adults visit CHRISTUS Spohn – Corpus Christi than visit Bayview Behavioral Hospital. But, among both adults and older adults, a slightly higher percentage of patients at Bayview Behavioral Hospital were paid for by Medicare (18% adults, 90% older adults), compared to 14% of adults and 86% of older adults admitted to CHRISTUS Spohn – Corpus Christi. Although CHRISTUS Spohn – Corpus Christi does not admit children, most patients admitted to Bayview Behavioral Hospital were paid for by Medicaid. The higher reimbursement rates from commercial insurance and Medicare (both disproportionately at Christus Spohn) likely offset the corresponding lower rate from self-pay patients.

Below, we contrast the distribution of payer types of people admitted to local hospital inpatient beds versus those served in the ED with a mental health or SUD condition. Table 19, above, showed that, in aggregate across area EDs, 27% of psychiatric ED visits and 47% of SUD ED visits were categorized as self-pay. This ratio contrasts with the 16% of inpatient bed patients at Bayview Behavioral Hospital and 28% of inpatient bed patients at Christus Spohn – Corpus Christi. Focusing on the 27% of self-pay ED psychiatric patients, Christus Spohn – Corpus Christi admitted a slightly larger share (28%) of self-pay psychiatric bed patients, indicating that there was no barrier to accessing care by this payer type. Bayview Behavioral Hospital, with 16% of inpatient psychiatric admissions by self-pay patients, may be less accessible to self-pay ED patients than to other payer types.



**Table 26: Admissions by Age Group and Payer to Psychiatric Beds at Nueces County Hospitals (CY 2018)<sup>86</sup>**

Age Group	Total Admissions	Medicaid	Medicare	Other Government	Self-Pay	Commercial Insurance
<b>Bayview Behavioral Hospital</b>						
<b>All Ages</b>	<b>2,388</b>	<b>41%</b>	<b>13%</b>	<b>9%</b>	<b>16%</b>	<b>19%</b>
Adults (Age 18 to 64)	1,336	22%	18%	13%	25%	21%
Older Adults (Age 65 and older)	83	4%	90%	0%	0%	5%
Youth (Age 12 to 17)	906	71%	0%	4%	4%	20%
Children (Age 6 to 11)	63	78%	2%	10%	3%	8%
<b>CHRISTUS Spohn – Corpus Christi</b>						
<b>All Ages</b>	<b>1,680</b>	<b>22%</b>	<b>22%</b>	<b>4%</b>	<b>28%</b>	<b>24%</b>
Adults (Age 18 to 64)	1,495	25%	14%	4%	32%	26%
Older Adults (Age 65 and older)	185	1%	86%	3%	0%	10%

Table 27 lists admissions to each hospital by county of residence (residents of Nueces County compared to all other non-local counties). At both hospitals (Bayview Behavioral Hospital and CHRISTUS Spohn – Corpus Christi), the majority of admissions were for local residents, with approximately 25% of admissions for non-local residents. Bayview Behavioral Hospital's non-local patients matched the local patients in payer type, with the exception of self-funded patients (10% versus 19%) and patients with other government payer type (22% versus 2%).

Similarly, people admitted to CHRISTUS Spohn – Corpus Christi were more likely to be self-funded if they were a local resident (29% of admissions by local residents) compared to those who were admitted from outside counties (18%). Thirty-eight percent (38%) of non-local residents admitted to CHRISTUS Spohn – Corpus Christi were funded through Medicare compared to 20% of admissions of Nueces County residents. Overall, among all admissions, regardless of county of residency, people admitted to CHRISTUS Spohn – Corpus Christi were more likely to be self-funded or funded through commercial insurance, whereas people admitted to Bayview Behavioral Hospital were more likely to be funded through other governmental payers. Bayview Behavioral Hospital also had higher proportions of Medicaid funding and lower proportions of Medicare funding. This difference is likely a result of Bayview

<sup>86</sup> Percentages in rows may not add up to 100% because a small number of admissions (fewer than 1%) did not have an identified payer. The table does not include hospitals with fewer than 10 admissions in the reported period. These include 30 total admissions across CHRISTUS Spohn Corpus Christi – Shoreline, Corpus Christi Medical Center – Bay Area, Corpus Christi Medical Center – Doctors Regional, and Corpus Christi Medical Center – Northwest.

Behavioral Hospital admitting children and youth, whereas CHRISTUS Spohn – Corpus Christi only admits adults.

**Table 27: Admissions to Nueces Psychiatric Beds by Local Versus Non-Local Residents (CY 2018)<sup>87</sup>**

Hospital	Total Admissions	Medicaid	Medicare	Other Government	Self-Pay	Commercial Insurance
<b>Bayview Behavioral Hospital</b>						
<b>Total Admissions</b>	<b>2,388</b>	<b>41%</b>	<b>13%</b>	<b>9%</b>	<b>16%</b>	<b>19%</b>
Admissions by Nueces Residents	1,538	44%	14%	2%	19%	19%
Non-Local Admissions	850	36%	11%	22%	10%	20%
<b>CHRISTUS Spohn – Corpus Christi</b>						
<b>Total Admissions</b>	<b>1,680</b>	<b>22%</b>	<b>22%</b>	<b>4%</b>	<b>28%</b>	<b>24%</b>
Admissions by Nueces Residents	1,491	23%	20%	3%	29%	24%
Non-Local Admissions	189	13%	38%	7%	18%	24%

### **Kleberg, Jim Wells, and San Patricio County Psychiatric Hospitals**

From 2015 through 2018, two hospitals in the counties surrounding Nueces County had psychiatric bed utilization: CHRISTUS Spohn Hospital – Alice in Jim Wells County and Care Regional Medical Center in San Patricio County. Care Regional Medical Center had 12 psychiatric beds for adults, but it closed in September 2017 after Hurricane Harvey. CHRISTUS Spohn Hospital – Alice had 11 psychiatric beds available to adults, but utilization ended in mid-August 2017. Both hospitals had at least one bed available on any given day from 2015 until each closed in 2017. The closure of these nearby hospitals may be one reason for the apparent increase in daily utilization at Bayview Behavioral Hospital in 2017 and 2018.

### **Nueces County Residents: Psychiatric Bed Utilization Statewide (CY 2018)**

This next section shows where residents of Nueces County (identified in dark blue on Map 7) were admitted to psychiatric beds throughout Texas. This analysis can provide additional context for psychiatric bed need in Nueces County. Frequent use of psychiatric beds outside of the region may indicate insufficient local capacity to serve local residents. Additional breakouts showing admissions by primary payer and diagnosis can indicate that certain sub-populations may have a high need that cannot be met locally.

<sup>87</sup> Percentages in rows may not add up to 100% because a small number of admissions (fewer than 1%) did not have an identified payer. The table does not include hospitals with fewer than 10 admissions in the reported period. These include 30 total admissions across CHRISTUS Spohn Corpus Christi – Shoreline, Corpus Christi Medical Center – Bay Area, Corpus Christi Medical Center – Doctors Regional, and Corpus Christi Medical Center – Northwest.

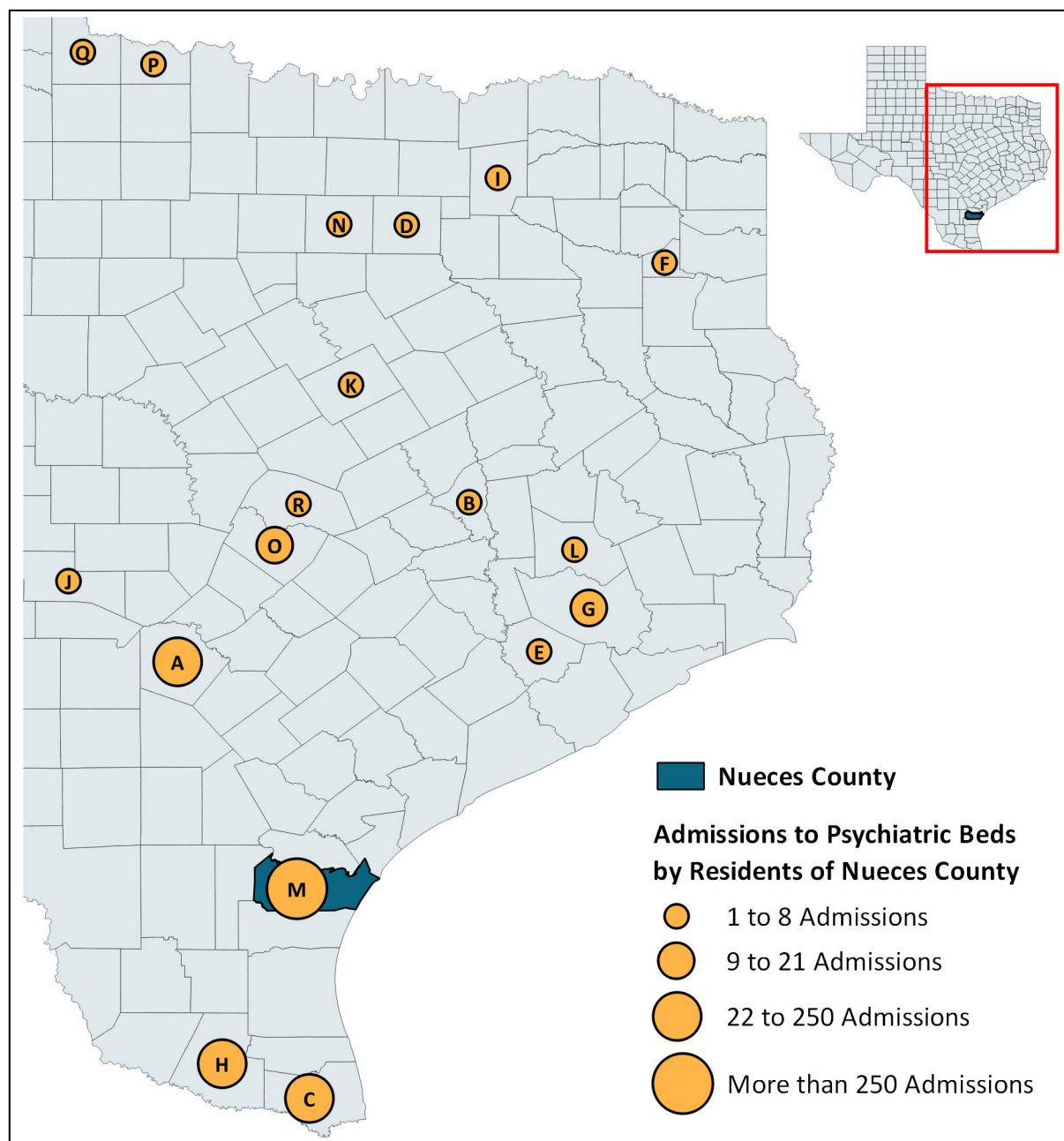
Map 7 shows where all Nueces County residents were admitted to psychiatric beds throughout Texas. The orange symbols represent the number of admissions from Nueces County. We have scaled these symbols to indicate the magnitude of admissions and have marked them with lettered labels that correspond to Table 28. Counties that had multiple hospitals with psychiatric beds that admitted Nueces County residents were aggregated into a single symbol to show the number of people who were admitted to hospitals in that particular county. Detailed hospital-level admissions are provided in Table 28, following the map. We obscured counts of fewer than six admissions to prevent patient re-identification.

As reported in Map 7 and the associated data table, below, hospitals that admitted the most Nueces County patients were in Nueces County: Bayview Behavioral Hospital, with 1,539 admissions, and CHRISTUS Spohn – Corpus Christi, with 1,491 admissions. Only 15% (522 admissions of 3,563 total admissions) of Nueces County residents were to non-local hospitals. In contrast, Table 27 reports 850 non-local admissions to Bayview Behavioral Hospital and 189 non-local admission to CHRISTUS Spohn – Corpus Christi. Many more non-local patients flow into Nueces County's psychiatric beds than local patients flow to beds outside of Nueces County.

Of the 522 admissions to non-local hospitals, about half (250) went to Bexar County, including 109 admissions to Laurel Ridge Treatment Center. Additionally, 103 admissions went to McAllen Medical Center in Hidalgo County, and 88 admissions went to Palms Behavioral Health in Cameron County. Additionally, 54 admissions went to state hospitals, including 39 that went to San Antonio State Hospital in Bexar County. Bexar, Hidalgo, and Cameron counties are each about a two-hour drive from Nueces County.

The bottom rows of Table 28 show the aggregated use of local and non-local beds broken out by age. Approximately the same proportion of each age group used non-local beds. This consistency supports the hypothesis that no single age group lacks beds.

Overall, few Nueces County residents received care outside of Nueces County. Of those who did, not all of the movement to distant hospitals was related to local access. For example, patients utilizing state hospitals often have forensic needs or more intensive need (e.g., comorbid intellectual and psychiatric disabilities) that required a more intensive setting than community hospitals.

**Map 7: Residents of Nueces County: All Admissions to Psychiatric Beds (CY 2018)****Table 28: Residents of Nueces County: Admissions to Psychiatric Beds by Age (CY 2018)**

Map Label	County and Hospital	All Ages	Adults	Children and Youth
A	Bexar	250	198	52
	Clarity Child Guidance Center	<6	N/A	<6
	Laurel Ridge Treatment Center	109	70	39

Map Label	County and Hospital	All Ages	Adults	Children and Youth
	Methodist Specialty & Transplant Hospital	23	23	N/A
	Nix Behavioral Health Center	10–14	9	<6
	Nix Health Care System	24–28	23	<6
	Nix Specialty Health Center	9	9	N/A
	Northeast Baptist Hospital	<6	<6	N/A
	San Antonio Behavioral Healthcare Hospital	20–24	19	<6
	San Antonio State Hospital	39	39	N/A
	Southwest General Hospital	<6	<6	N/A
	University Hospital	<6	<6	N/A
<b>B</b>	<b>Brazos – Rock Prairie Behavioral Health</b>	<b>&lt;6</b>	<b>&lt;6</b>	<b>N/A</b>
<b>C</b>	<b>Cameron</b>	<b>91</b>	<b>67</b>	<b>24</b>
	Palms Behavioral Health	88	64	24
	Rio Grande State Center	<6	<6	N/A
	Valley Baptist Medical Center	<6	<6	N/A
<b>D</b>	<b>Dallas – Methodist Richardson Medical Center</b>	<b>&lt;6</b>	<b>&lt;6</b>	<b>N/A</b>
<b>E</b>	<b>Fort Bend – Westpark Springs</b>	<b>&lt;6</b>	<b>&lt;6</b>	<b>N/A</b>
<b>F</b>	<b>Gregg – Oceans Behavioral Hospital of Longview</b>	<b>&lt;6</b>	<b>&lt;6</b>	<b>N/A</b>
<b>G</b>	<b>Harris</b>	<b>21</b>	<b>21</b>	<b>N/A</b>
	Behavioral Hospital – Bellaire	<6	<6	N/A
	Harris County Psychiatric Center	<6	<6	N/A
	Houston Behavioral Healthcare Hospital	<6	<6	N/A
	Houston Methodist Hospital	<6	<6	N/A
	IntraCare North Hospital	<6	<6	N/A
	Lone Star Behavioral Health Cypress	<6	<6	N/A
	Menninger Clinic	<6	<6	N/A
	Oceans Behavioral Hospital of Katy	<6	<6	N/A
	Sun Behavioral Houston	<6	<6	N/A
<b>H</b>	<b>Hidalgo</b>	<b>110</b>	<b>79</b>	<b>31</b>
	Doctors Hospital-Renaissance	7	7	N/A
	McAllen Medical Center	103	72	31
<b>I</b>	<b>Hunt – Glen Oaks Hospital</b>	<b>&lt;6</b>	<b>&lt;6</b>	<b>N/A</b>

Map Label	County and Hospital	All Ages	Adults	Children and Youth
J	Kerr – Kerrville State Hospital	<6	<6	N/A
K	McLennan – DePaul Center	<6	<6	N/A
L	Montgomery	<6	<6	N/A
	Aspire Hospital	<6	<6	N/A
	Woodland Springs	<6	<6	N/A
M	Nueces	3,041	2,383	658
	Bayview Behavioral Hospital	1,539	885	654
	CHRISTUS Spohn – Corpus Christi	1,491	1,491	N/A
	CHRISTUS Spohn Hospital Corpus Christi – Shoreline	<6	<6	N/A
	Corpus Christi Medical Center – Bay Area	<6	<6	<6
	Corpus Christi Medical Center– Doctors Regional	<6	<6	N/A
	Corpus Christi Medical Center – Northwest	<6	N/A	<6
N	Tarrant – Sundance Hospital	<6	<6	<6
O	Travis	20–24	19	<6
	Austin Lakes Hospital	<6	<6	N/A
	Austin Oaks Hospital	<6	<6	N/A
	Austin State Hospital	<6	<6	<6
	Seton Shoal Creek Hospital	6	6	N/A
	Texas NeuroRehab Center	<6	<6	N/A
P	Wichita – North Texas State Hospital	<6	<6	N/A
Q	Wilbarger – North Texas State Hospital-Vernon	6	6	N/A
R	Williamson	8–12	7	<6
	Georgetown Behavioral Health Institute	<6	<6	<6
	Rock Springs	<6	<6	N/A
Total Admissions		3,563	2,794	769
Admissions to Local Nueces Hospitals		3,041	2,383	658
Admissions to Non-Local Hospitals		522	411	111
Admissions to State Hospitals		53–57	52	<6

Table 29 summarizes the previous table by payer. Nueces County residents who received care in non-local hospitals were more likely to be funded through other government (10%) or commercial insurance (37%), compared to patients who received care locally (2% other

government, 22% commercial insurance). Residents who received care locally were more likely to be funded through Medicaid (34% vs. 18%) and were slightly more likely to be self-funded (24% vs. 19%). These differences reflect the broader range of options for patients with commercial insurance, but they are not large enough to indicate a lack of access for self-funded patients.

**Table 29: Residents of Nueces County, Admissions to Psychiatric Beds Statewide by Payer – All Ages (CY 2018)**

Hospital	Total Admissions	Medicaid	Medicare	Other Gov't.	Self-Pay	Commercial Insurance
<b>Admissions to Local Hospitals<sup>88</sup></b>	<b>3,041</b>	<b>34%</b>	<b>17%</b>	<b>2%</b>	<b>24%</b>	<b>22%</b>
Bayview Behavioral Hospital	1,539	44%	14%	2%	19%	19%
CHRISTUS Spohn Hospital Corpus Christi	1,491	23%	20%	3%	29%	24%
<b>Admissions to Non-Local Hospitals</b>	<b>522</b>	<b>18%</b>	<b>16%</b>	<b>10%</b>	<b>19%</b>	<b>37%</b>
Admissions to State Hospitals	54	0%	0%	0%	100%	0%
Admissions to Other Non-Local Hospitals	468	20%	18%	12%	9%	41%
<b>Total Admissions to All Hospitals</b>	<b>3,563</b>	<b>32%</b>	<b>17%</b>	<b>4%</b>	<b>23%</b>	<b>24%</b>

Finally, the following table (Table 30) contrasts daily capacity and utilization of psychiatric beds in Nueces County. The table presents an overview of per-day average psychiatric bed utilization for each hospital from November 2015 through November 2018. It shows that on most days, psychiatric beds were available at both CHRISTUS Spohn – Corpus Christi and at Bayview Behavioral Hospital.

<sup>88</sup> Some hospitals only had a handful of admissions. These admissions are included in totals but are not provided as individual hospital breakouts. These include 11 admissions to CHRISTUS Spohn – Shoreline, Corpus Christi Medical Center – Bay Area, Corpus Christi Medical Center – Doctors Regional, and Corpus Christi Medical Center – Northwest hospitals.

**Table 30: Average Daily Psychiatric Utilization and Capacity – Nueces County (CY 2018)<sup>89</sup>**

Type of Utilization	CHRISTUS Spohn Hospital Corpus Christi	Bayview Behavioral Hospital
<b>Adult Utilization</b>		
Average Daily Utilization	24	23
Utilization as a Percentage of Capacity	75%	71%
Percentage of Days with Available Beds	94%	81%
<b>Child and Youth Utilization</b>		
Average Daily Utilization	N/A	17
Utilization as a Percentage of Capacity	N/A	70%
Percentage of Days with Available Beds	N/A	87%

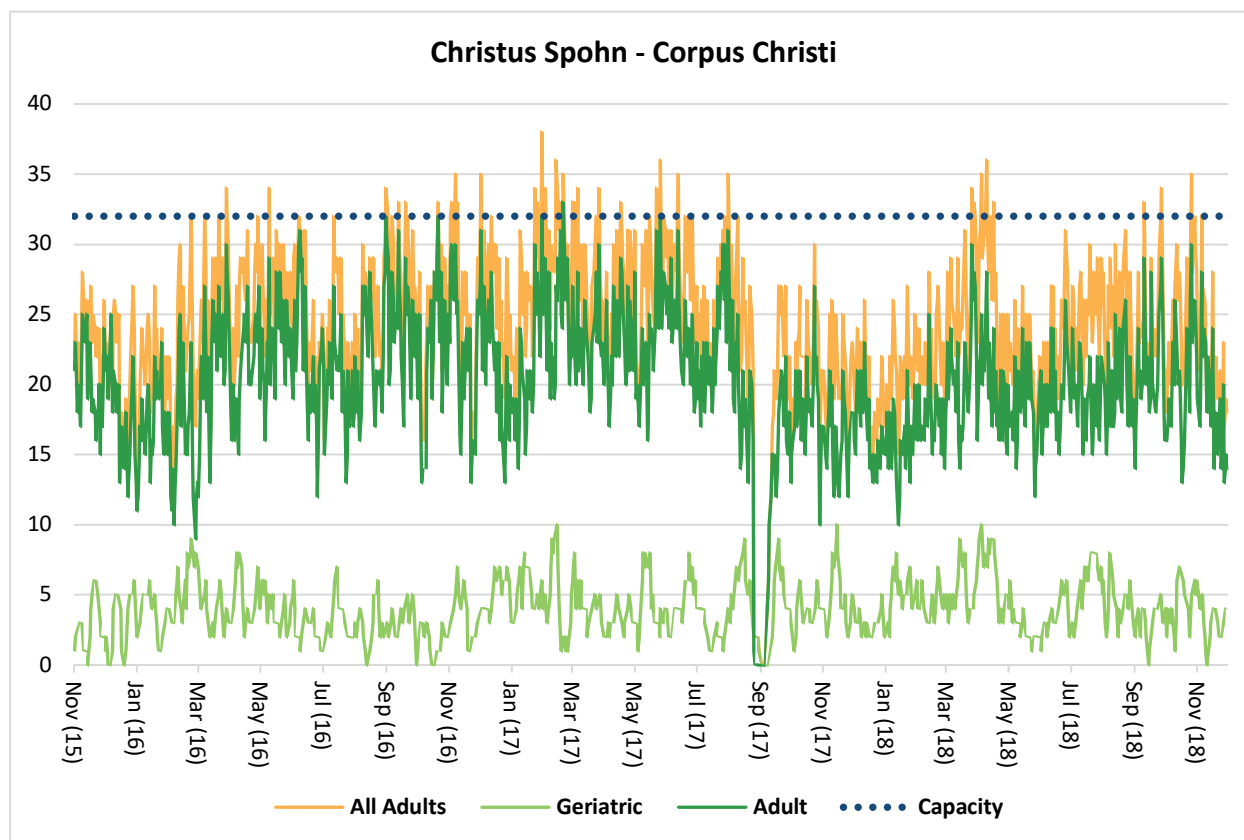
The time series charts in figures 2 and 3 show day-by-day analysis for each hospital between January 2016 and November 2018. Figure 2 reveals that CHRISTUS Spohn – Corpus Christi occasionally operated beyond its capacity, though, as Table 30 shows, the vast majority (94%) of days had bed availability.

<sup>89</sup> Hospitals with small counts of psychiatric bed utilization (hospitals that on average, do not have at least one person in a bed on any given day) and hospitals without a reported psychiatric bed capacity are not included. These hospitals are CHRISTUS Spohn Corpus Christi – Shoreline, Corpus Christi Medical Center – Northwest, Corpus Christi Medical Center – Heart Hospital, Corpus Christi Medical Center – Bay Area, and Corpus Christi Medical Center – Doctors Regional Hospital.



### Christus Spohn – Corpus Christi

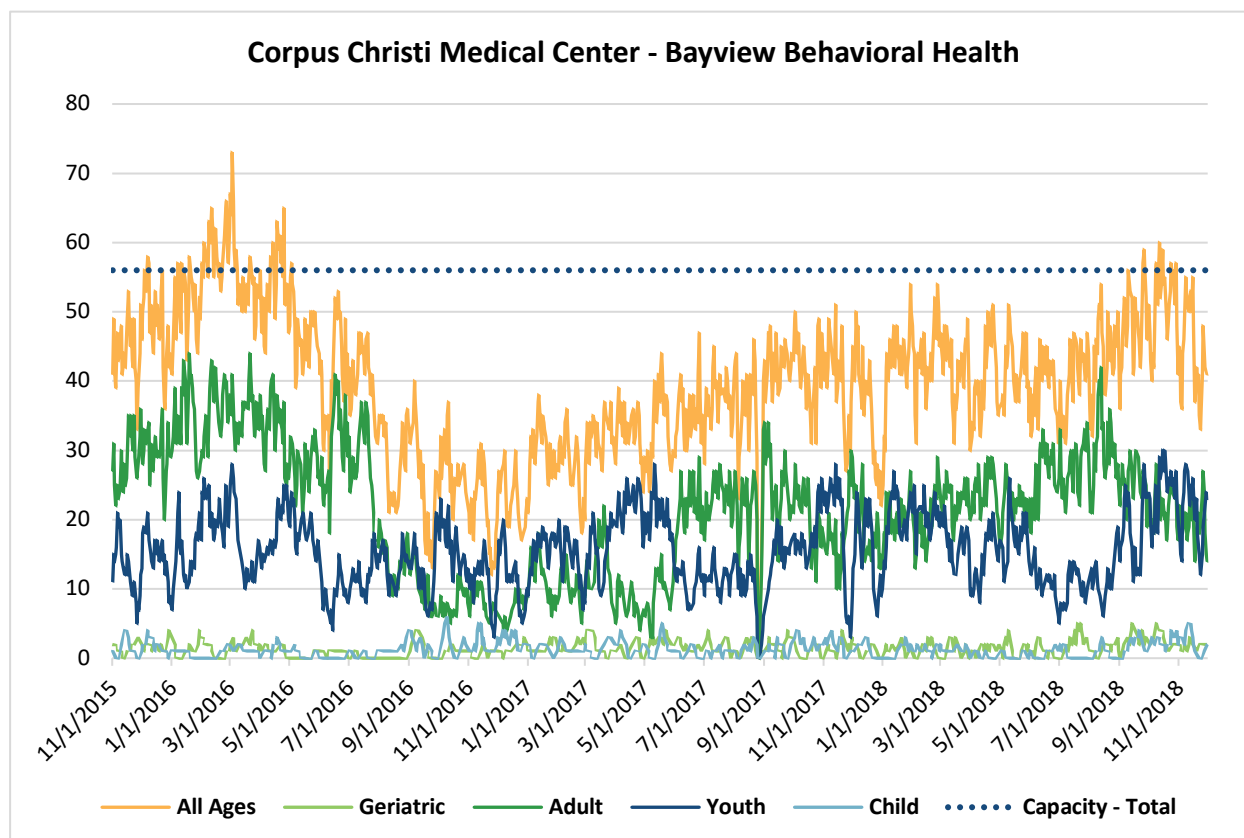
**Figure 2: CHRISTUS Spohn – Corpus Christi Daily Utilization Versus Capacity (January 2016–November 2018)**



At Bayview Behavioral Hospital, 23 adults and 17 children and youth, on average, occupied beds each day (40 total across age groups) compared to 56 available beds, including 24 pediatric beds. Thus, although many of the beds were being occupied (70% overall as shown in Table 30), the hospital was not usually operating over capacity. Figure 3 presents the points throughout the time period when utilization exceeded capacity. Despite multiple periods when the hospital exceeded capacity, beds were available most days (81% to 87%, depending on age group; see Table 30). Based on data beginning in November 2015, the time series graph (Figure 3) shows a trend in increased bed utilization over time, with the greatest utilization and concentrations of days operating at capacity during the end of 2018. A continuation of this trend will result in a lack of available beds at Bayview Behavioral Hospital.

### Bayview Behavioral Hospital

**Figure 3: Bayview Behavioral Hospital Daily Utilization Versus Capacity (January 2016–November 2018)**



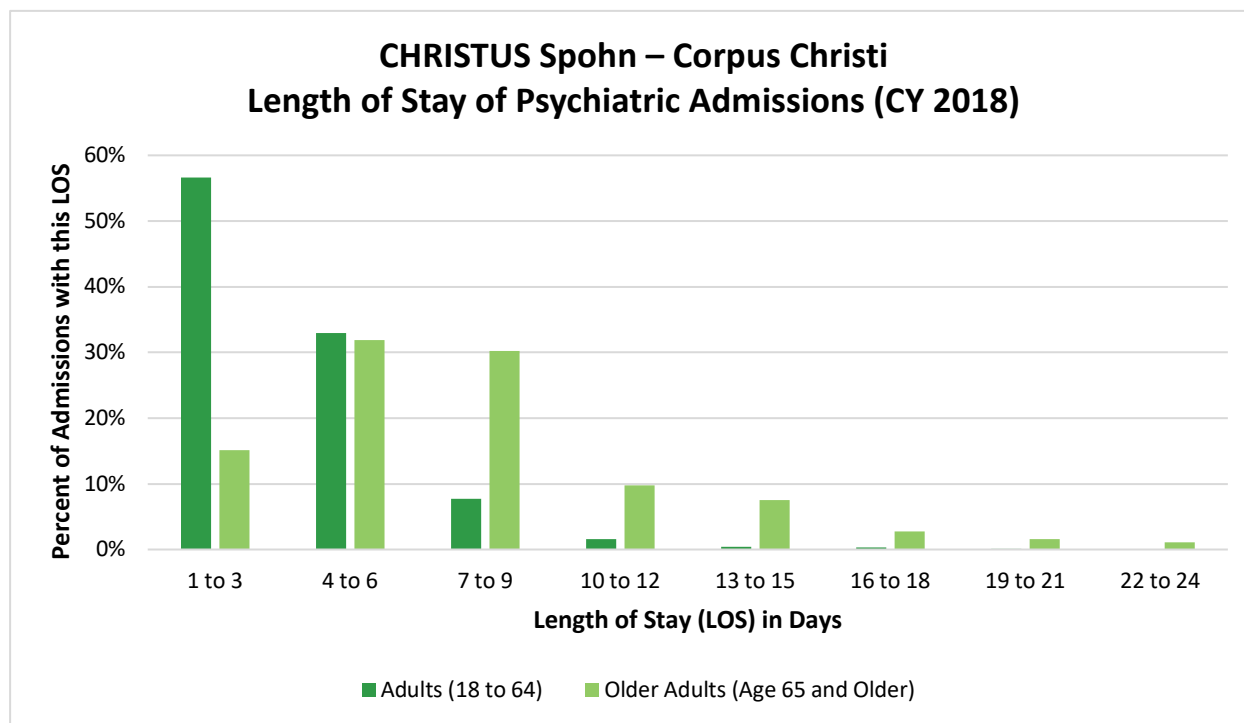
We conclude that Nueces County has sufficient local inpatient psychiatric beds to meet the needs of local residents. Our conclusion is based on the following key findings:

- When we examine subpopulations of patients by age and payer type, we do not observe disproportionality in bed use consistent with limited local access.
- The number of patients from other counties who use Nueces County psychiatric beds exceeds the number of Nueces County patients who use beds in other counties.
- On most days, inpatient beds are available at each hospital.

Although there appears to be sufficient local psychiatric beds to meet current needs, it is also useful to examine bed utilization for signs of gaps in care for community-based outpatient services. Poor access to outpatient services, or insufficient capacity in certain types of services, will result in unnecessary inpatient bed use. Several features of inpatient bed use help identify problems with the availability of outpatient services. This includes analysis of length of stay, co-occurring psychiatric and substance use disorders, and comorbid behavioral and medical conditions.

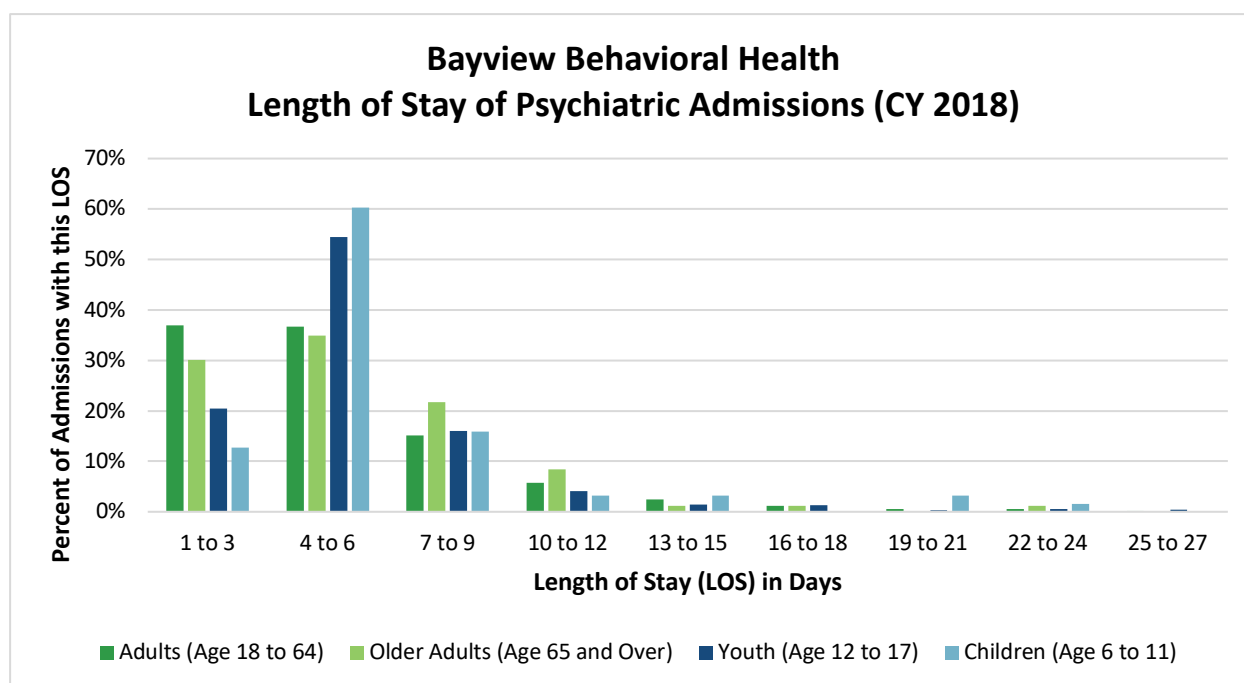
Figure 4 shows the lengths of stay at CHRISTUS Spohn – Corpus Christi by age group. Most adults between the ages of 18 and 64 has a length of stay of just one to three days. Older adults above age 64 stayed for somewhat longer, but still fewer than 10% stayed for longer than two weeks. CHRISTUS Spohn – Corpus Christi does not report utilization for children or youth. The length of stay analysis at CHRISTUS Spohn – Corpus Christi shows rapid stabilization and discharge for adults, but less so for older adults.

**Figure 4: Christus Spohn – Corpus Christi Length of Stay Details<sup>90</sup>**



The average length of stay graph for Bayview Behavioral Hospital shows a more muted difference between adults and older adults, but it still shows longer lengths of stay for the older population. A disproportionate number of children and youth had lengths of stay between four and six days, with some utilization of more than two weeks.

<sup>90</sup> Of the 1,680 total admissions, only five people had lengths of stay of more than 24 days. These are not displayed on the graph.

**Figure 5: Bayview Behavioral Hospital Length of Stay Details<sup>91</sup>**

The extended length of inpatient stays for older adults may reflect a lack of stepdown to skilled nursing facilities, forcing older patients to remain hospitalized beyond what is medically necessary. Or it may reflect conditions in older populations that are more difficult to stabilize. Chart reviews and analysis of the availability of skilled nursing facilities could help clarify if inpatient bed use in Nueces County hospitals may be reduced for older patients with mental illness.

Extended lengths of stay for some children and youth at Bayview Behavior Hospital also warrant further investigation. These cases are relatively rare, but in other Texas hospitals, extended hospitalization has occasionally occurred for children and youth in the foster care system who are unable to be placed with families. Because of the disruption caused by extended inpatient episodes, these cases should be reviewed to rule out systematic problems in the child welfare system.

Tables 31 through 35 report psychiatric bed utilization by Nueces County residents, by diagnoses, including substance use disorders and other comorbid conditions. Table 31 shows the number of people from Nueces County who were admitted to a psychiatric bed in calendar year (CY) 2018, and the percentage of these patients with any substance use disorder diagnosis. The remaining balance of patients predominantly had psychiatric diagnoses. Among those

<sup>91</sup> Of all admissions, only 23 people (3%) had lengths of stay longer than 24 days. These are not included on the graph.

admitted locally, approximately 44% had a substance use disorder (SUD) – almost identical to the 45% of admissions to non-local hospitals. However, a higher proportion of admissions to CHRISTUS Spohn – Corpus Christi had SUD (51%) compared to Bayview Behavioral Hospital. This variance may result from CHRISTUS Spohn – Corpus Christi not admitting children and youth, who typically have lower rates of SUD than adults.

**Table 31: Residents of Nueces County, Admissions to Psychiatric Beds for Psychiatric Versus Substance Use Disorder Admissions – All Ages (CY 2018)**

Age Group	Total Admissions	Percentage of Admissions with Any SUD Diagnosis
<b>Admissions to Nueces Hospitals<sup>92</sup></b>	<b>3,041</b>	<b>44%</b>
Bayview Behavioral Hospital	1,539	37%
CHRISTUS Spohn – Corpus Christi	1,491	51%
<b>Admissions to Other Non-Local Hospitals</b>	<b>522</b>	<b>45%</b>

Table 32 shows the number of people admitted to psychiatric beds with co-occurring psychiatric and substance use conditions, broken out by the primary diagnosis (psychiatric versus substance-related conditions as the primary diagnosis). The table shows that several people with primary psychiatric diagnoses had co-occurring substance use disorders. This was true for 1,241 of 2,899 admissions to local beds (43% of local admissions) and for 151 of 482 (31%) of non-local admissions. Among 99 admissions to psychiatric beds with a primary substance use disorder (including 68 to local beds and 31 to non-local beds), most (82) had a co-occurring psychiatric disorder.

**Table 32: Residents of Nueces County, Admissions of Patients with Co-Occurring Psychiatric and Substance Use Disorders – All Ages (CY 2018)<sup>93</sup>**

Hospital of Admission	Primary Psychiatric Diagnosis		Primary Substance Use Diagnosis	
	Admissions	Admissions with Secondary SUD Diagnoses	Admissions	Admissions with Secondary Psychiatric Diagnoses
<b>All Admissions to Local Nueces County Beds</b>	<b>2,899</b>	<b>1,241</b>	<b>67 – 71</b>	<b>58 – 62</b>

<sup>92</sup> There were 11 admissions to other hospitals in Nueces County. These are included in totals but not in separate breakouts because of low counts.

<sup>93</sup> In addition to the 3,382 admissions with a primary psychiatric diagnosis and the 1,392 admissions with a primary SUD diagnosis, 82 admissions had a primary “other” diagnosis. These “other” diagnoses, although not psychiatric diagnoses, were those that are often the result of, or contribute to, psychiatric symptoms. These include diagnoses such as Alzheimer’s disease, open physical wounds, and carbon monoxide poisoning.

Hospital of Admission	Primary Psychiatric Diagnosis		Primary Substance Use Diagnosis	
	Admissions	Admissions with Secondary SUD Diagnoses	Admissions	Admissions with Secondary Psychiatric Diagnoses
Admissions to Bayview Behavioral Hospital	1,437	491	66	57
Admissions to CHRISTUS Spohn – Corpus Christ	1,455	749	<6	<6
<b>Admissions to Non-Local Beds</b>	<b>483</b>	<b>151</b>	<b>31</b>	<b>23</b>
<b>All Admissions (to Local and Non-Local Beds)</b>	<b>3,382</b>	<b>1,392</b>	<b>98 – 102</b>	<b>81 – 85</b>

The high number of psychiatric bed admissions related to substance use disorders is consistent with Table 6 and Table 13. National Survey On Drug Use and Health sub-state results show that most people in need of treatment for substance use in Texas do not receive care. If Nueces County followed a similar trend, then almost none of the 15,000 Nueces adults and 1,000 youth with a substance use disorder would receive treatment. The lack of access to community-based SUD treatment would result in crisis use of psychiatric beds.

As reported in Table 33, the most common psychiatric diagnosis among Nueces County residents seeking inpatient care was major depressive disorder followed by bipolar disorder, then schizoaffective disorders. However, among those who received care in non-local hospitals, the top diagnosis was bipolar disorder, followed by major depressive disorder (MDD in Table 33).

Table 34 shows the most common comorbid physical conditions among Nueces residents receiving inpatient care. Among residents admitted locally and non-locally for psychiatric conditions, some of the most common physical conditions are nicotine dependence, primary hypertension, and hyperlipidemia.

**Table 33: Residents of Nueces County, Top 10 Primary Diagnoses Associated with Admissions to Local and Non-Local Psychiatric Beds – All Ages (CY 2018)**

Rank	All Admissions to Inpatient Psychiatric Beds		Admissions to Local Inpatient Beds		Admissions to Non-Local Inpatient Beds	
	Top Primary Diagnoses	Admissions	Top Primary Diagnoses	Admissions	Top Primary Diagnoses	Admissions
<b>Total</b>		<b>3,551</b>		<b>3,030</b>		<b>521</b>
<b>1</b>	MDD Recurrent	1,436	MDD, Recurrent	1,335	Bipolar Disorder	124

Rank	All Admissions to Inpatient Psychiatric Beds		Admissions to Local Inpatient Beds		Admissions to Non-Local Inpatient Beds	
	Top Primary Diagnoses	Admissions	Top Primary Diagnoses	Admissions	Top Primary Diagnoses	Admissions
2	Bipolar Disorder	604	Bipolar Disorder	480	MDD, Recurrent	101
3	Schizoaffective Disorders	419	Schizoaffective Disorders	333	Schizoaffective Disorders	86
4	MDD, Single Episode	340	MDD, Single Episode	278	MDD, Single Episode	62
5	Schizophrenia	161	Schizophrenia	129	Schizophrenia	32
6	Alcohol-Related Disorders	111	Alcohol-Related Disorders	88	Persistent Mood Disorders	24
7	Adjustment Disorders	72	Adjustment Disorders	58	Alcohol-Related Disorders	23
8	Persistent Mood Disorders	67	Unspecified Mood Disorder	52	Adjustment Disorders	14
9	Unspecified Mood Disorder	55	Persistent Mood Disorders	43	Unspecified Mood Disorder	10
10	Unspecified Psychosis	48	Unspecified Psychosis	38	Impulse Disorders	10

**Table 34: Residents of Nueces County, Top 10 Secondary Physical Health Diagnoses Associated with Admissions to Local and Non-Local Psychiatric Beds – All Ages (CY 2018)**

Rank	All Admissions to Inpatient Psychiatric Beds		Admissions to Local Inpatient Beds		Admissions to Non-Local Inpatient Beds	
	Top Physical Health Diagnoses	Admissions	Top Physical Health Diagnoses	Admissions	Top Physical Health Diagnoses	Admissions
<b>Total</b>		<b>21,909</b>		<b>19,191</b>		<b>2,718</b>
1	Nicotine Dependence	1,228	Nicotine Dependence	1,106	Nicotine Dependence	122
2	Primary Hypertension	777	Primary Hypertension	678	Personal Risk Factors, Not Classified	109
3	Cannabis-Related Disorders	665	Cannabis-Related Disorders	595	Primary Hypertension	99
4	Personal Risk Factors, Not Classified	644	Allergy to Substance	578	Sleep Disorders	90

Rank	All Admissions to Inpatient Psychiatric Beds		Admissions to Local Inpatient Beds		Admissions to Non-Local Inpatient Beds	
	Top Physical Health Diagnoses	Admissions	Top Physical Health Diagnoses	Admissions	Top Physical Health Diagnoses	Admissions
5	Allergy to Substance	592	Personal Risk Factors, Not Classified	535	Cannabis-Related Disorders	70
6	Alcohol Related Disorders	560	Alcohol Related Disorders	507	ADHD	64
7	Other Fluid, Electrolyte, Acid-Base Balance Disorder	496	Other Fluid, Electrolyte, Acid-Base Balance Disorder	482	Type 2 Diabetes	55
8	Hyperlipidemia	415	Hyperlipidemia	369	Alcohol-Related Disorders	53
9	Cocaine-Related Disorders	404	Cocaine-Related Disorders	360	Hyperlipidemia	46
10	Type 2 Diabetes	404	Asthma	357	Cocaine-Related Disorders	44

Table 35 shows the top physical health diagnoses among people with secondary psychiatric conditions, substance use disorders, and or co-occurring psychiatric and substance use disorders (COPSD). The most common primary condition among these patients was sepsis. Type 2 diabetes and acute kidney failure were also among the most prevalent medical conditions for this group. People who had secondary psychiatric diagnoses (but not substance-related diagnoses) most commonly had osteoarthritis, femur fracture, or were overweight. Type 1 diabetes was one of the most common conditions among people with COPSD (but not psychiatric or SUD disorders alone). Finally, among people with SUD diagnoses (but not psychiatric disorders), liver disease and cerebral infarction (stroke) were in the top 10 physical diagnoses.

**Table 35: Medical Inpatient Hospitalizations of Nueces Residents with Co-Occurring Psychiatric and Substance Use Disorders – All Ages (CY 2018)**

Rank	Top Primary Physical Diagnoses with Secondary Psychiatric Diagnoses		Top Primary Physical Health Diagnoses with Secondary SUD Diagnoses		Top Primary Physical Health Diagnoses with Secondary COPSD Diagnoses	
	Physical Health Diagnosis	Secondary Psychiatric Admissions	Physical Health Diagnosis	Secondary SUD Admissions	Physical Health Diagnosis	Secondary COPSD Admissions
Total		4,874		1,387		504
1	Sepsis	292	Sepsis	118	Sepsis	43



Rank	Top Primary Physical Diagnoses with Secondary Psychiatric Diagnoses		Top Primary Physical Health Diagnoses with Secondary SUD Diagnoses		Top Primary Physical Health Diagnoses with Secondary COPSD Diagnoses	
	Physical Health Diagnosis	Secondary Psychiatric Admissions	Physical Health Diagnosis	Secondary SUD Admissions	Physical Health Diagnosis	Secondary COPSD Admissions
2	Osteoarthritis of Knee	174	Alcoholic Liver Disease	59	Cellulitis and Acute Lymphangitis	23
3	Chronic Obstructive Pulmonary Disease	124	Heart Attack	50	Acute Pancreatitis	15
4	Fracture of Femur	113	Cellulitis and Acute Lymphangitis	49	Type 1 Diabetes	15
5	Overweight and Obesity	103	Acute Pancreatitis	40	Epilepsy and Recurrent Seizures	15
6	Acute Kidney Failure	101	Cerebral Infarction	39	Acute Kidney Failure	14
7	Type 2 Diabetes	101	Acute Kidney Failure	36	Cutaneous Abscess	14
8	Pneumonia	95	Type 2 Diabetes	35	Alcoholic Liver Disease	13
9	Spondylopathies	90	Chronic Obstructive Pulmonary Disease	25	Type 2 Diabetes	11
10	Heart Attack	80	Skull/Facial Fracture	23	Other Diseases of Digestive System	11

### Summary Takeaways

- The majority of Nueces County residents are Hispanic or Latino, and a higher proportion of Hispanic or Latino people live in poverty than non-Hispanic Whites (Table 2 and Table 8). By the year 2050, the population among all age groups is expected to increase, with the population of adults over the age of 65 growing at the fastest rate (see Table 3 and Table 9). Based on these projections, **the underlying need for behavioral health services for children and youth in Nueces County should show modest growth through 2050, while the need for behavioral health services for older adults may increase disproportionately to other age groups.**

- In 2017, approximately 5,000 Nueces County children and youth had serious emotional disturbances (SED) (Table 5), and about 10,000 to 15,000 adults had serious mental illnesses (SMI) (Table 11). Across all ages, about half of those with SED or SMI lived in poverty. When contrasting counts of people served by setting at Behavioral Health Center of Nueces County to the estimated number of people living in poverty with SED or SMI (Tables 13 through 18), we found that **there was a large gap in care for children and youth with serious emotional disturbances (SED) who were living in poverty, and just 34% of adults in need received care through the LMHA.**
- Two hospitals in surrounding counties have not provided psychiatric inpatient care for more than a year (and one closed because of Hurricane Harvey). However, based on the usual availability of inpatient psychiatric beds and the use of 25% of current beds by residents of counties outside the region, Nueces area hospitals do not appear to have a shortage of inpatient capacity (Table 30).
- In 2018, people were over five times more likely to visit the ED for psychiatric diagnoses than for SUD diagnoses (Table 19). This ratio matches the prevalence data, which show that the prevalence of all mental health conditions is about five times that of SUD.
- Although there appears to be enough local capacity overall, admissions by people with lower-rate funding sources may be straining local resources.
  - **People visiting the ED who were then placed in a psychiatric bed were more often placed in local beds when their care was self-funded, and placed in non-local beds when their care was funded through commercial insurance.** Among people who were hospitalized in a psychiatric bed after visiting a Nueces County ED, more than half were hospitalized locally, indicating a typically sufficient local capacity to meet the local need. However, people who were funded through Medicaid, other government funds, or were self-funded were more often hospitalized locally, whereas people who were funded through Medicare or commercial insurance are more often hospitalized non-locally (Table 24).
  - **A higher proportion of Nueces County residents were admitted locally when self-funded.** Among Nueces County residents who received inpatient care, those who received care locally were more likely to be funded through Medicaid or self-funded than were those who received care outside of the county. In contrast, patients who received care outside of the county were more likely to be funded through commercial insurance (Table 29).
  - **Self-pay and Medicare patients were less likely to receive inpatient care after visiting an ED.** A comparison of all psychiatric ED visits (Table 19) to psychiatric ED visits that resulted in inpatient hospitalization (Table 24) showed that people who were self-funded or funded through Medicare received inpatient care less frequently after visiting an ED, whereas people with commercial insurance received care more frequently when compared to payer proportions among total psychiatric ED visits.

## Appendix One: Prevalence Estimation Methodology

### Introduction

To provide meaningful estimates based on the most rigorous and contemporary epidemiological sources available regarding overall numbers (prevalence) for serious emotional disturbance (SED) and serious mental illness (SMI), we have utilized the work of Dr. Charles Holzer.<sup>94</sup> In 2014, Dr. Holzer worked on behalf of MMHPI to estimate the prevalence of SMI in Texas counties using 2012 and earlier data.<sup>95</sup> We believe that Dr. Holzer's original SED and SMI estimates and our adaptation of his data, findings, and methodologies to more recent Texas populations provide the most practically relevant estimates available. The method, described in more detail below, uses statistical formulas that apply national prevalence findings to Texas population and demographic data.

Estimating the prevalence of specific mental illnesses such as bipolar disorder, depression, or schizophrenia in different age groups (e.g., children, youth, adults) is a more complicated endeavor – one requiring us to incorporate the best available national studies of the prevalence of those specific disorders. In cases where these more specific epidemiological sources are used, these are always cited, and in all cases represent, what we judge to be the best available, sufficiently contemporary source.

### Holzer and “Horizontal Synthetic Estimation”

Beginning with his work at the University of Florida in the 1970s, Holzer drew connections between established data (drawn largely from census data), demographics, and the careful study of how these factors correlated with various needs among populations.<sup>96</sup> Holzer derived principles about these connections as presented in the Mental Health Demographic Profile System (MHDPS). This system matched demographic data from the Florida Health Survey with community demographics and known needs for mental health services, creating a model for estimating need in places and situations in which survey data were not available.

The method, which those in the MHDPS team termed “Horizontal Synthetic Estimation,” evolved as Holzer refined his work. A crucial step came in the 1980s following the National Institute of Mental Health's Epidemiologic Catchment Area (ECA) program, the largest

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<sup>94</sup> Charles E. Holzer III, PhD, is an esteemed psychiatric epidemiologist who has worked and published in behavioral science for forty years.

<sup>95</sup> In 2014, MMHPI hired Dr. Holzer to perform a revised county-level prevalence estimate throughout Texas. Dr. Holzer licensed the study and methodology to MMHPI on an ongoing basis. If referencing prevalence estimates from this report, please include this citation: Holzer, C., Nguyen, H., & Holzer, J. (2016). *Texas county-level estimates of the prevalence of severe mental health need in 2015*. Dallas, TX: Meadows Mental Health Policy Institute.

<sup>96</sup> Unless otherwise cited, the information presented is from Dr. Holzer's web page at <http://172.10.175.217/estimation/estimation.htm>

psychiatric epidemiological study in the United States at the time. Holzer used ECA findings to develop a series of prevalence estimates for the Texas Department of Mental Health and Retardation, a project which led to several similar projects, including estimates in Colorado, Ohio, and Washington State. Following the 1990 Census and the 1993 National Comorbidity Survey (NCS), Holzer developed estimates in other states, including Colorado, Wyoming, and Nebraska, among others, and included county-level prevalence estimates.

Holzer's method represented a departure from less-precise methods. First, he argued, the extant approaches that relied on service utilization mistakenly assumed that local mental health systems served all people with mental health needs. He also criticized some forms of indirect estimation, such as those that used social indicators (crime levels, poverty, divorce, etc.), with no reference to actual data on mental illnesses.

Holzer argued that if prevalence estimates and their correlates with demographic characteristics from national epidemiological studies were applied to state and county populations, he could provide more precise estimates of mental health need. He used statistical methods that analyzed survey data from the 2001–2003 Collaborative Psychiatric Epidemiology Surveys (CPES)<sup>97</sup> to estimate the relationships between seven socio-demographic characteristics (i.e., age, sex, race/ethnicity, marital, education, poverty, housing status) and SED and SMI prevalence rates.<sup>98</sup> He then applied these rates to the most up-to-date, available county- or state-level American Community Survey (ACS)<sup>99</sup> population and demographic data, which include estimates of the number of people who can be categorized by the same seven socio-demographic characteristics.

### **MMHPI Adaptation of Holzer's Methodology and Data**

In 2014, MMHPI hired Dr. Holzer to perform a revised county-level estimate throughout Texas using 2012 Three-Year ACS data (the most recently available data at the time). Dr. Holzer then licensed the methodology to MMHPI for use in estimating prevalence in Texas. From this work, and by using Dr. Holzer's findings, especially his 2012 estimates of the MMHPI-commissioned study of Texas, we have developed a new series of 2017 estimates utilizing the 2017 ACS Five-Year dataset and the 2017 Population Estimates. These data were the most current at the time of our analysis.

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<sup>97</sup> The CPES is a collaboration that includes the NCS-R, NLAAS, and NSAL combined. See <http://172.10.175.217/estimation/documentation/CPES/cpes.htm>

<sup>98</sup> Detailed information on Dr. Holzer's method is available at <http://172.10.175.217/estimation/estimation.htm>

<sup>99</sup> The ACS is an extension of the U.S. Census Bureau. It is an ongoing statistical survey that gathers significant data that, among other things, track shifting demographic data. The use of ACS data helps to align the Holzer estimates with the most up-to-date information on key demographic information.

## Estimating the Prevalence of Specific Disorders

In estimating the prevalence of specific disorders, we draw on the most recent national prevalence studies conducted by psychiatric epidemiologist Ron Kessler and colleagues, as well as on reviews of prevalence studies that target specific disorders. The two primary national studies are the National Comorbidity Survey Replication (NCSR)<sup>100</sup> and the National Comorbidity Survey Replication-Adolescent Supplement (NCSR-A).<sup>101</sup> These studies provide national estimates of specific disorders. We then apply these estimates to the Texas populations of the same age groups (all adults ages 18+ and adolescents ages 12–17, respectively).

The national studies did not include all disorders of interest. For example, because of its very low prevalence rate, schizophrenia was not included in the NCSR. In cases of missing diagnoses in the NCSR or SCSR-A, we rely on what we determine to be the best available reviews of epidemiological studies specific to each diagnosis.<sup>102</sup>

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<sup>100</sup> Kessler, R.C., et al. (2005). Prevalence, severity, and comorbidity of 12-month DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of General Psychiatry*, 62(6), 617–627.

<sup>101</sup> Kessler, R.C., et al. (2012). Severity of 12-month DSM-IV disorders in the National Comorbidity Survey Replication Adolescent Supplement. *Archives of General Psychiatry*, 69(4), 381–389.

<sup>102</sup> See for example McGrath, J., et al. (2008). Schizophrenia: A concise overview of incidence, prevalence, and mortality. *Epidemiological Reviews*, 30, 67–76.

## Appendix Two: Nueces Hospital Data and Methodology

We drew our data for emergency department and inpatient psychiatric bed use from the Texas Health Care Information Collection (THCIC). THCIC comprises inpatient, emergency department, and outpatient discharge records for hospitals operating throughout Texas. Each discharge record included details on the client's age, length of stay, county of residence, charges (which reflect the nominal amount billed for each service), primary payer type, and source of admission, among other variables. To analyze the many sources of funding included in records, payer types were grouped into one of five categories for the purposes of this analysis: Medicaid, Medicare, Other Governmental Payer, Self-Pay, and Commercial Insurance.

These THCIC discharge records were used to analyze psychiatric inpatient and emergency department utilization in Nueces County and across Texas, as depicted in the maps and data tables in this report. While we currently have data from 2015 through the fourth quarter of calendar year (CY) 2018, the data in the maps and tables are limited to a single full year of data – January 2018 through December 2018, with the exception of the daily utilization graphs, which report utilization as far back as January 2016. Discharge records were either reported by age group or aggregated across all age groups, as described in the table titles.

Hospital capacity data were obtained from the American Hospital Association's (AHA) 33<sup>rd</sup> Annual Survey of Hospitals (for year 2017). We reported the number of beds that are staffed for use by each hospital. However, if the hospital reported an alternate number of available beds in the most recent in-person interviews, we used that reported capacity in lieu of the AHA reported capacity.