Population Health Report CY 2024 - Branch County

Southwest Michigan Behavioral Health
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1 Introduction

Southwest Michigan Behavioral Health (SWMBH) developed this Population Health Analysis to examine health-related characteristics and outcomes for Medicaid enrollees in Branch County, Michigan. The analysis evaluates calendar year 2024 data, focusing on demographics, diagnosis patterns for behavioral and chronic health conditions, prescribing trends, and use of high-cost healthcare services.

This study provides a baseline understanding of the health status and healthcare utilization of the Branch County Medicaid population, identifying patterns and disparities that may inform targeted interventions and areas for further analysis.

Data sources include Medicaid enrollment and encounter records (medical, behavioral, and pharmacy) for Branch County residents, made available to SWMBH by the State of Michigan. The Behavioral Health Treatment Episode Data Set (BH-TEDS) was used to supplement housing status information for individuals receiving PIHP- or CMH-funded services.

To assess condition prevalence and healthcare utilization, services were grouped by diagnosis categories (behavioral health and chronic physical conditions) and service types, including inpatient hospitalizations and emergency department visits. Analyses were stratified by age, race, and Medicare dual enrollment to identify population subgroups with elevated needs or service use. Comparative metrics from broader eight-county SWMBH Medicaid population are included to contextualize local results.

Relias's Population Performance platform supported the analysis of healthcare quality indicators and prescription patterns.

The analysis focuses on the following areas:

1. Demographic Overview
2. Health Profile of Medicaid Enrollees
3. Behavioral Health Conditions
4. Chronic Physical Health Conditions
5. Inpatient and Emergency Department Utilization
6. Multimorbidity and Hospitalization Risk Indicators
7. Gaps in Care

1.1 Summary of Findings

The analysis highlights the prevalence of chronic conditions among Branch County Medicaid enrollees and their overlap with behavioral health needs. Utilization patterns suggest multiple opportunities to improve care delivery and reduce avoidable high-cost services, particularly among individuals with comorbid conditions, behavioral health diagnoses, and certain demographic subgroups.

The findings below summarize notable health trends, service utilization patterns, and potential care improvement opportunities in the Branch County Medicaid population.

1.1.0.1 Behavioral Health Conditions

- Roughly one in three (27.1%) Branch County Medicaid enrollees had a behavioral health diagnosis in 2024, with higher rates among adults (30.4%) compared to children (21.9%).
- Prevalence was highest among adult females (33.1%), followed by adult males (26.8%), child males (23.8%), and child females (19.9%). These differences suggest that adult women are particularly likely to have a behavioral health diagnosis in this population.
- Behavioral health conditions were more common among females overall (28.4%) than males (25.5%), though among children, boys had slightly higher rates.
- These findings indicate a need for continued focus on adult behavioral health services, particularly for women, as well as early behavioral interventions for children, especially boys.

1.1.0.2 Chronic Conditions and Comorbidities

- Physical and mental health are deeply interconnected. Individuals with a behavioral health diagnosis were 3 times more likely to have at least one chronic physical health condition compared to those without, underscoring the importance of whole-person care approaches.
- Chronic conditions were highly prevalent in the dually eligible population. Across all tracked chronic conditions, diagnosis rates were consistently higher among individuals with both Medicare and Medicaid coverage, highlighting the need for targeted care coordination strategies for this high-need group.
- Racial and ethnic differences were observed in chronic condition diagnoses, though patterns may reflect differences in access to care, diagnostic practices, or health-related social needs. White enrollees had higher diagnosis rates overall, which may be partially attributed to more consistent healthcare engagement or systemic differences in who receives a diagnosis.

1.1.0.3 Hospital and Emergency Department Utilization

- Behavioral health conditions are closely linked to higher healthcare utilization. Individuals with a behavioral health diagnosis had substantially higher rates of emergency department (ED) use, particularly among those with serious mental illness (SMI) and substance use disorders (SUD). Inpatient hospitalization rates were also significantly elevated, especially among those with serious mental illness, substance use disorders, and physiological behavioral diagnoses.
- Multimorbidity, defined as having multiple chronic conditions, was strongly associated with an increased risk of hospitalization. Adults with more than one chronic condition had sharply higher hospitalization rates compared to those with none. The hospitalization rate for individuals with multimorbidity was 14.3%, compared to 4.8% for those without multiple conditions.

1.1.0.4 Pharmacy Utilization and Risk

- Behavioral health-related pharmacy risk flags were common among both adults and children and were strongly associated with elevated hospitalization risk.

- Among adults, individuals who triggered at least one behavioral pharmacy quality indicator (QI) had a 5.7 times higher rate of hospitalization than those without any flags. The highest-risk indicators included:
  - Use of Opioids and Benzodiazepines for 30 or More Days
  - Failure to Refill Antipsychotic Medication

  These risk patterns were especially prevalent among individuals with behavioral health diagnoses.
- Among children, triggering any behavioral pharmacy QI was associated with a 2.2 times higher hospitalization rate, with the most common and impactful being Failure to Refill Antipsychotic Medication.
- County-level prescribing patterns diverged from regional trends. Antidepressant prescriptions were more common in Barry County than in the broader SWMBH region.
- Medication adherence challenges were evident across age groups. A substantial number of individuals failed to refill maintenance medications on schedule. Most notable issues included:
  - Failure to Refill Antipsychotic Medication
  - Multiple prescribers of the same class of psychotropic medications for 45 or more days

2 Who is in the Study

The total Branch County Medicaid population in 2024 (N = 16469) was identified by looking at Medicaid enrollment data over the one-year report period and identifying the number of unique enrollees with full Medicaid or Healthy Michigan Plan benefits. Individuals enrolled in Medicaid for maternal services only or emergency services only (e.g., whose immigration status or incarceration prohibit full Medicaid benefits) were not included in the study or the above count. Individuals were included in the study regardless of duration of Medicaid coverage during the year. Each person was assigned to their most recent (latest) Medicaid county during the year, so county-level totals may be slightly lower than actual enrollment over the full period.

Of those enrolled, 76.9% had at least one Medicaid service, and 11.2% received services funded by a PIHP or CMH. On average, enrollees were covered for 9 months during the report period.

According to estimates from the U.S. Census Bureau, the overall population of Branch County in CY 2024 was 46,187. Thus the Medicaid coverage rate for that year was approximately 35.7%. For all subsequent sections of this report, Branch County Medicaid enrollees are the subject of our analyses.

3 Population Health Profile

3.1 Distribution of SWMBH enrollees by Zip Code

Figure 1 below presents a heat map of geographic distribution of the Branch County Medicaid cohort based on their zip code of residence.

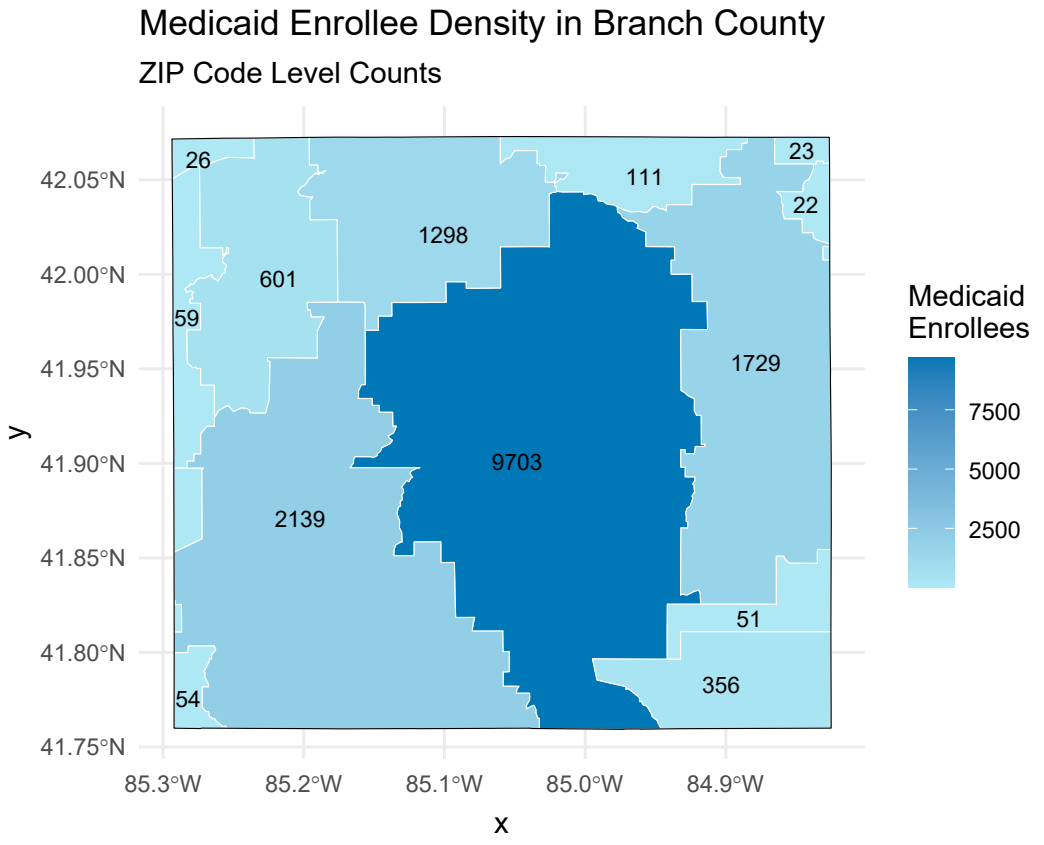

Figure 1. Count of CY 2024 Medicaid enrollees by zip code of address.

3.2 Population Characteristics

3.2.1 Age and Sex

As seen in Figure 2, Branch County has an average age at the end of the fiscal year of 28.8 years. Among the population, 38.9% were aged 17 or younger, 53.7% were between 18 and 64, and 7.5% were aged 65 or older. The figure below illustrates the age distribution separated by sex of Branch County enrollees. The Branch County Medicaid population is composed of 46.5% males and 53.5% females.

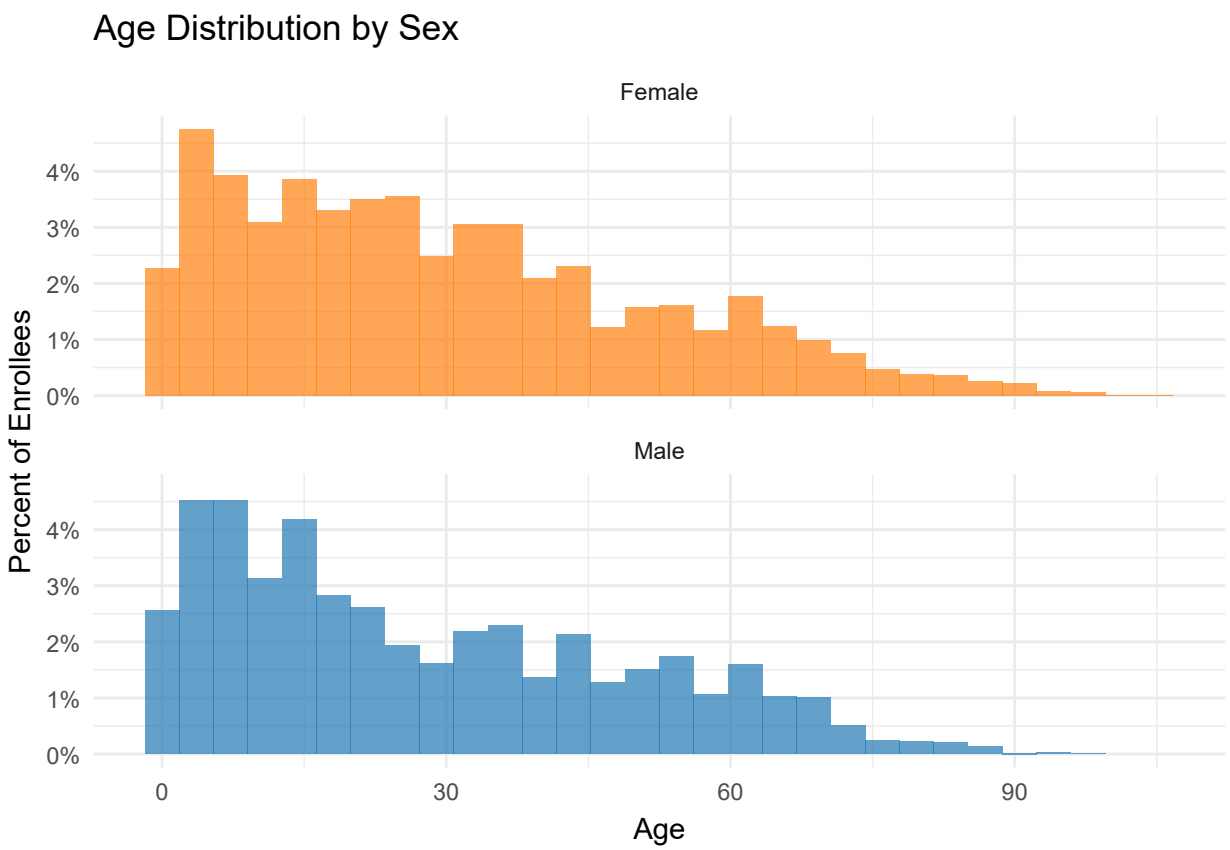

Figure 2. Distribution of age among the population split by sex.

3.2.2 Race/Ethnicity

To align with MDHHS's method for Core Set metrics, race and ethnicity were assigned based on the latest Medicaid 834 enrollment records available at the time of data extraction. Individuals identified as Hispanic ethnicity were classified in the "Hispanic" racial/ethnic group regardless of race. For all others, the race reported in the first Medicaid enrollment race field was used.

In Branch County, 84.3% identified as White, 4.2% as Other Race, 2.9% as Black or African American, and 0.8% as American Indian or Alaska Native, 0.2% as Asian, 7.6% as Hispanic or Latino. This is seen in Figure 3 below.

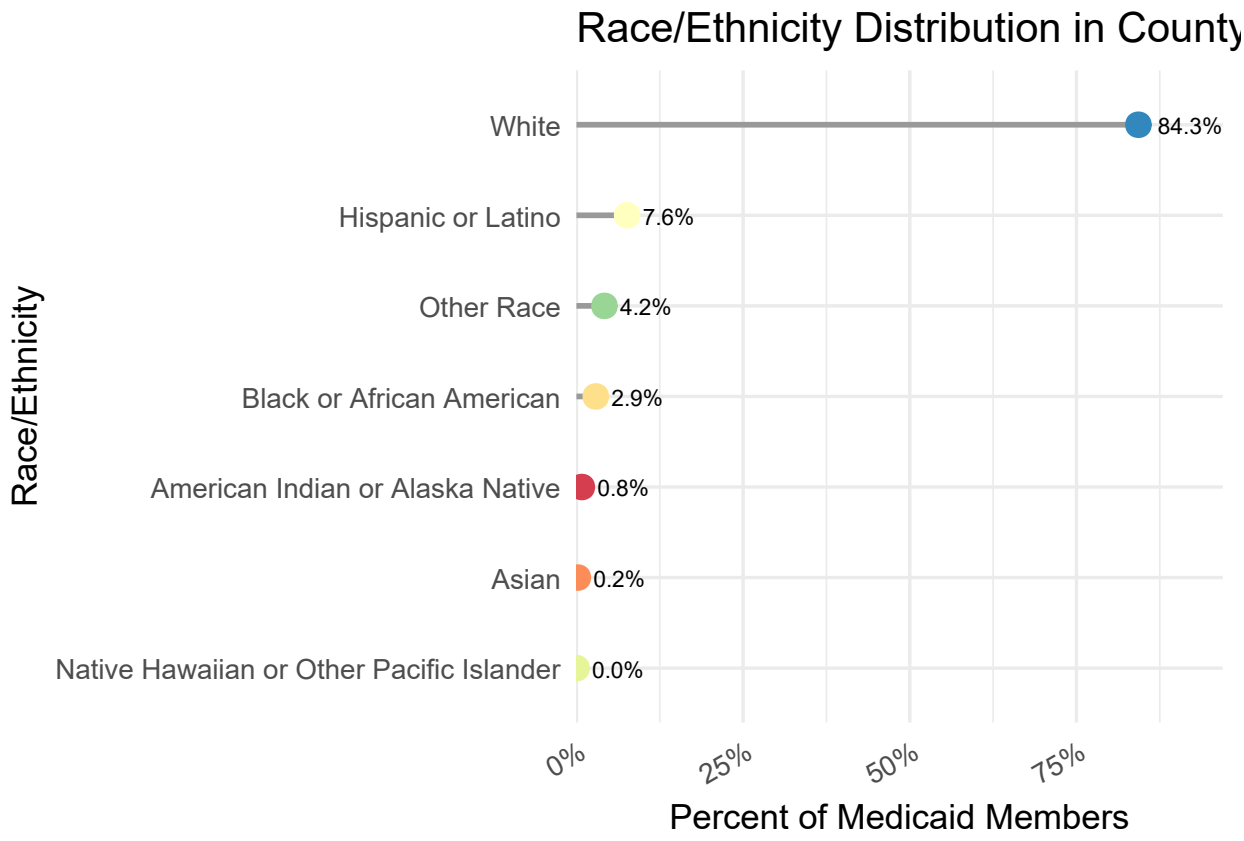

Figure 3. Percentage of Medicaid enrollees by race and ethnicity.

3.2.3 Living Arrangements

Living arrangement statuses were gathered from PIHP or CMH-served enrollees' latest recorded events in the Behavioral Health Treatment Episode Data Set (BH-TEDS). BH-TEDS are a form of demographic and outcome tracking based on multiple points of time: admission into an episode of care, annual updates, and discharge. BH-TEDS living arrangements were categorized into four groups: dependent, unhoused, independent, and unknown (consult the glossary for more details on how classifications were made). Table 1 below compares the distribution of living arrangement overall in the SWMBH region to Branch County.

Table 1: Living Arrangement by Region
Medicaid Enrollees in Branch County

	Branch County N = 2,090	SWMBH N = 33,003
Living Arrangement	County	SWMBH
Dependent	221 (11%)	3,689 (11%)
Independent	1,737 (83%)	27,248 (83%)
Unhoused	130 (6.2%)	2,010 (6.1%)
Unknown	2 (<0.1%)	56 (0.2%)

3.2.4 Medicaid-Medicare Dual Eligibility

As seen in table 2, about 9.2% of the Branch County Medicaid population was also enrolled in Medicare in 2024. This report compares adults with Medicaid-only coverage to those who are dually enrolled in both Medicaid and Medicare. Dual enrollment increases significantly with age: 0% of individuals under 18, 7.8% of adults aged 18 to 64, and 67.5% of those aged 65 and older were enrolled in both programs. To account for age-related differences in dual eligibility, the report presents separate analyses for the 18–64 and 65+ age groups.

Table 2: Medicare Coverage by Age Group
Medicaid Enrollees in Branch County

Age Group	Total Enrollees	Enrolled in Medicare	Percent Medicare
18-64	8,837	685	7.8%
65+	1,229	830	67.5%
<18	6,403	0	0%
All Ages	16,469	1,515	9.2%

4 Behavioral Health

4.1 Method and Definitions

For this study, ICD-10 diagnosis codes on 2024 Medicaid service encounters were analyzed to assess the 2024 incidence of various behavioral health and chronic physical conditions in the Branch County Medicaid population. PIHP/CMH funded behavioral health services, services by Medicaid Health Plans, and Medicaid Fee-For-Service encounters were included in diagnostic assignments. Any behavioral health diagnosis was included in the analysis, regardless of Medicaid funding source, service type, diagnosis position on the claim, or number of times a diagnosis was reported.

Services were grouped into overarching "primary behavioral health groups" (e.g., intellectual/developmental disabilities, substance use disorders) and more specific "behavioral health conditions" (e.g., depressive disorders, schizophrenia, autism spectrum disorder) for which enrollees were treated during the year. For "behavioral health conditions" both primary condition (for which an individual has the most diagnoses over the year) and any additional diagnosed conditions were identified. ICD-10 codes included in each of the categories were defined and validated by two behavioral health clinicians, an RN, and a public health analyst from SWMBH. SWMBH's diagnostic groupings were validated against similar population health diagnostic groupings where detailed ICD-10 definitions were available (MDHHS's CareConnect360 and Relias's Population Performance). These definitions can be provided upon request.

4.2 Primary Behavioral Health Group Definitions

Assignment to primary behavioral groups was based on individuals' most frequently occurring behavioral health diagnoses in 2024. There is no overlap between the populations assigned to each of these groups. The primary behavioral health groups used include:

- **Intellectual/Developmental Disabilities (IDD):** Intellectual disabilities and pervasive developmental disorders such as autistic disorder are included.
- **Mild/moderate mental illness:** This group is primarily comprised of anxiety disorders, ADHD, and mild to moderate forms of depressive and bipolar disorders.

- **Serious mental illness (SMI) / Serious emotional disturbance (SED):** This group is primarily comprised of schizophrenia and severe forms of depressive and bipolar disorders.

- **Substance use disorders (SUD):** Includes addictive and substance use-related disorders associated with any substance, as well as gambling disorder.

- **Other:** this group includes behavioral health conditions not included in the other groups, such as conditions with known physiological causes (e.g., dementia), specific learning disorders, communication disorders, and unspecified mental health conditions. This group's statistics are not specifically identified after the following graphic, because the group includes a highly variable group of conditions. When later comparisons are made between individuals with no behavioral health diagnosis and the primary behavioral health groups, this group is excluded from the analyses.

4.3 Prevalence of Behavioral Health (BH) Conditions

As seen in Figure 4 below, our analysis found that 27.1% of the Branch County Medicaid population received a behavioral health diagnosis at some point in 2024. Of those with behavioral health conditions, 54.7% had primarily Mild/Moderate MI diagnoses, 21.5% had primarily Severe MI diagnoses, 8.4% had primarily Other Neurodevelopmental Disorders diagnoses, 6.9% has primarily Substance-Related diagnoses, Intellectual/Developmental Disabilities% had primarily Intellectual/Developmental Disabilities diagnoses, and 3.6% had primarily Physiological diagnoses. These numbers are summarized in Table 3 as well. Each enrollee was assigned to one diagnostic type only.

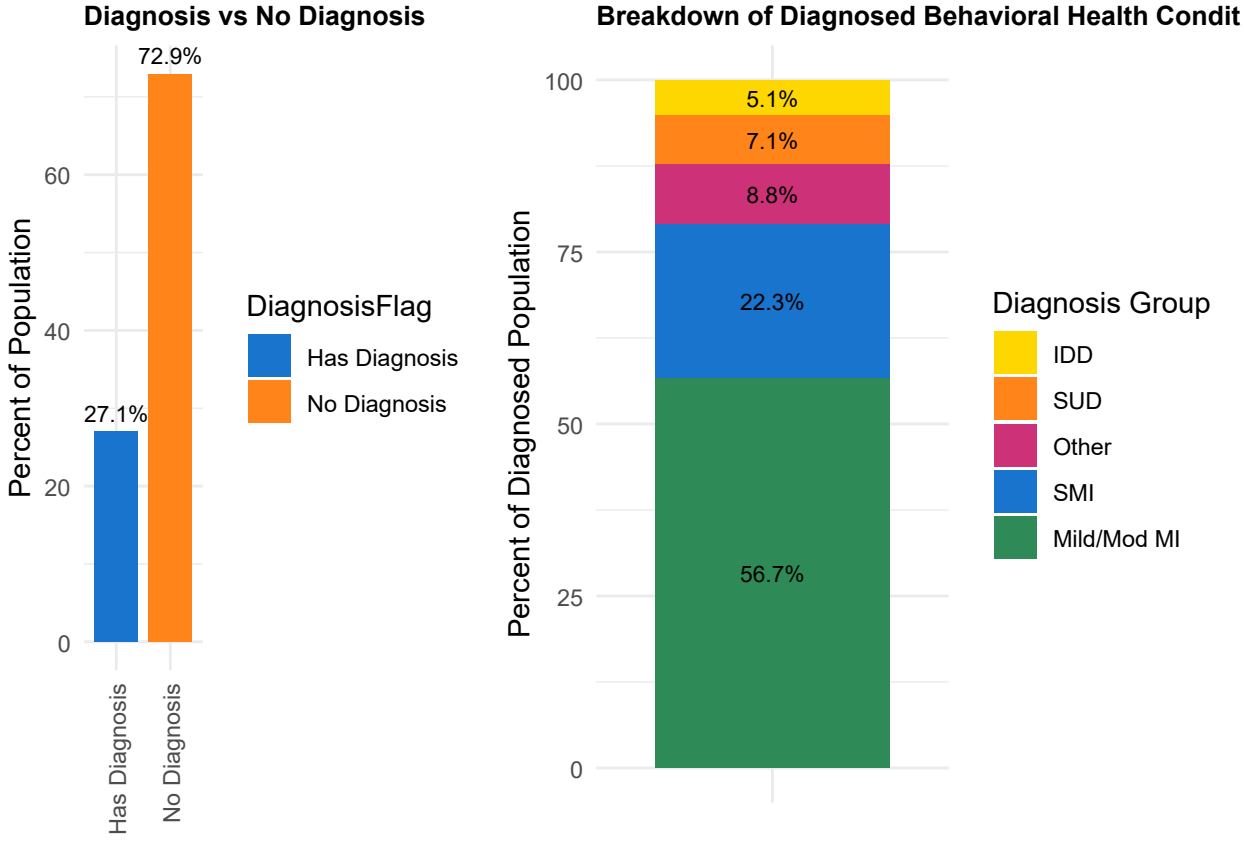

Figure 4. The left panel shows the percentage of Medicaid enrollees with and without a recorded BH diagnosis. The right panel breaks down the distribution of primary BH diagnosis group among those with a diagnosis.

Table 3: Distribution of Behavioral Health Diagnoses

Medicaid Enrollees in Branch County with BH Diagnoses

Diagnosis Group	n	Percent
Mild/Mod MI	2,436	56.7%
SMI	959	22.3%
Other	376	8.8%
SUD	307	7.1%
IDD	217	5.1%

4.4 Comparison to Region

Below, Table 4 contains rates of overall prevalence for different behavioral health conditions for Branch County and the SWMBH region overall. These numbers add up to more than 100% as enrollees may receive more than one behavioral health diagnosis. Percentages that are statistically significant are bolded and color-coded (red - high, green - low) depending on whether a higher or lower rate exists compared to the rest of the region. Significance was tested using chi-square tests with Bonferroni correction for repeated analysis.

Table 4: Behavioral Health Diagnosis Rates in Branch

Compared to region-wide rates, with significant differences color-coded (Bonferroni-adjusted p < 0.05)

Diagnosis	Region %	Branch County %
Any BH	29.5%	**27.1%**
Anxiety	13.8%	**11.7%**
Depressive	11.3%	**10.2%**
SUD	4.4%	**3.7%**
Bipolar	3.2%	**3.8%**
Schizophrenia	1%	**0.7%**
Personality Disorder	1.2%	1.3%
OCD	0.5%	0.5%
Adjustment Disorder	4.9%	**2.7%**
Dementia	0.8%	**1.1%**
Impulse Control and Conduct	1.5%	1.7%
Autism Spectrum	1.7%	1.9%
IDD	1.2%	1.1%
Trauma Related	4.1%	4.6%
ADHD	5.8%	**5.2%**

4.5 Behavioral Health Conditions by Age Group and Sex

4.5.1 Behavioral Health Conditions by Age Group

Table 5 below contains behavioral health condition diagnosis rates by adult and child/adolescent age groupings. Diagnosis patterns for children and adolescents varied from those of adults, with lower rates of diagnosis seen in children and adolescents. In Branch County, 30.4% of adults and 21.9% of children had at least

one behavioral health diagnosis. Among adults, the most common conditions were Anxiety, Depressive, Bipolar. Among children, the most common were ADHD, Anxiety, Depressive.

Table 5: Behavioral Health Conditions by Age Group

N (%) with Diagnosis among Total Group

	Age Group	
Condition	Adult	Child
Any BH	3056 (30.4%)	1400 (21.9%)
Anxiety	1579 (15.7%)	343 (5.4%)
Depressive	1437 (14.3%)	250 (3.9%)
Bipolar	608 (6%)	20 (0.3%)
SUD	593 (5.9%)	18 (0.3%)
Trauma Related	546 (5.4%)	204 (3.2%)
ADHD	344 (3.4%)	505 (7.9%)
Adjustment Disorder	243 (2.4%)	209 (3.3%)
Personality Disorder	211 (2.1%)	5 (0.1%)
Dementia	173 (1.7%)	0 (0%)
IDD	159 (1.6%)	16 (0.2%)
Autism Spectrum	106 (1.1%)	210 (3.3%)
Schizophrenia	113 (1.1%)	1 (0%)
Impulse Control and Conduct	82 (0.8%)	197 (3.1%)
OCD	71 (0.7%)	10 (0.2%)

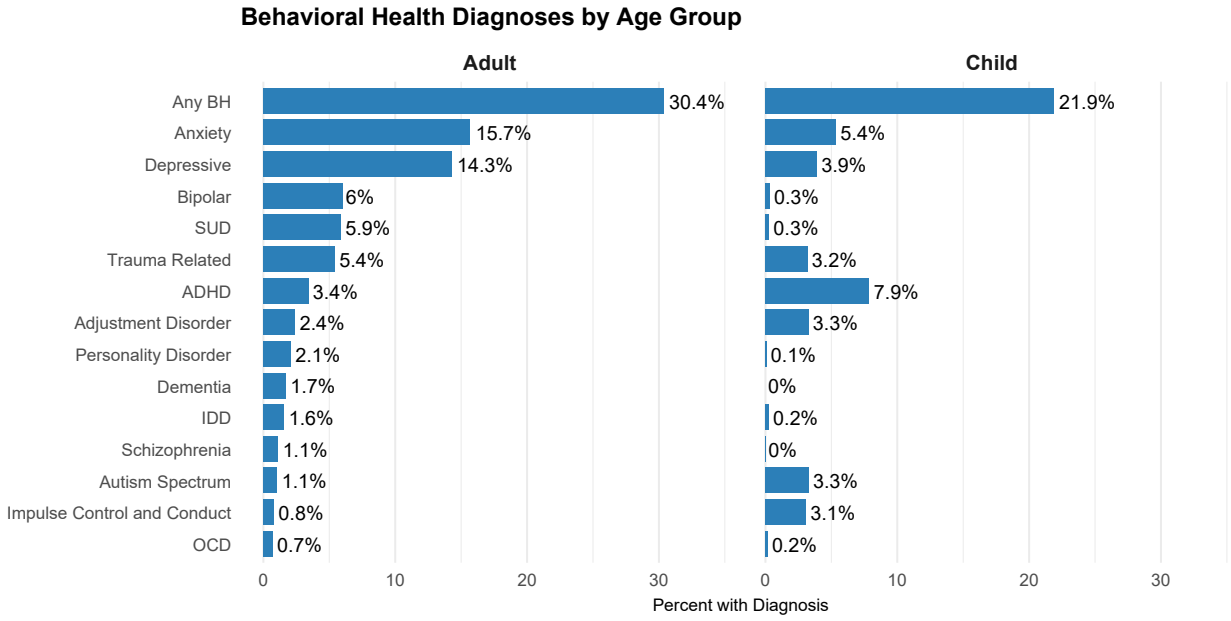

Figure 5. Compares the percent of individuals with each BH diagnosis between adults and children.

4.5.2 Behavioral Health Conditions by Sex for Adults and Children/Adolescents

Table 6 shows the frequency of behavioral health diagnoses by sex for adults and children/adolescents in Branch County.

Overall, 28.4% of females and 25.5% of males had at least one behavioral health diagnosis in 2024.

Among children, a greater percentage of males (23.8%) were diagnosed with a behavioral health condition compared to females (19.9%). This difference is most pronounced in ADHD diagnoses, where 9.8% of male children were diagnosed compared to 5.9% of female children.

Among adults, 33.1% of females were diagnosed compared to 26.8% of males.

Females were much more frequently diagnosed with anxiety and depressive disorders. Conversely, intellectual disabilities and autism spectrum disorder were more commonly diagnosed among males in both adults and children. Among adults, schizophrenia was diagnosed 2.6 times more often in males than females, and substance use disorders were 1.7 times more common in males.

Efforts to improve screening and reduce stigma, may help address these disparities.

Table 6: Behavioral Health Conditions by Age Group and Sex

N (%) with Diagnosis among Total Group

Condition	Adult		Child	
	Adult Male	Adult Female	Child Male	Child Female
Any BH	1174 (26.8%)	1882 (33.1%)	778 (23.8%)	622 (19.9%)
Anxiety	491 (11.2%)	1088 (19.1%)	133 (4.1%)	210 (6.7%)
Depressive	487 (11.1%)	950 (16.7%)	83 (2.5%)	167 (5.3%)
SUD	338 (7.7%)	255 (4.5%)	9 (0.3%)	9 (0.3%)
Bipolar	213 (4.9%)	395 (6.9%)	10 (0.3%)	10 (0.3%)
Trauma Related	156 (3.6%)	390 (6.9%)	85 (2.6%)	119 (3.8%)
ADHD	152 (3.5%)	192 (3.4%)	321 (9.8%)	184 (5.9%)
Adjustment Disorder	103 (2.4%)	140 (2.5%)	91 (2.8%)	118 (3.8%)
IDD	88 (2%)	71 (1.2%)	12 (0.4%)	4 (0.1%)
Autism Spectrum	75 (1.7%)	31 (0.5%)	158 (4.8%)	52 (1.7%)
Schizophrenia	75 (1.7%)	38 (0.7%)	1 (0%)	0 (0%)
Impulse Control and Conduct	55 (1.3%)	27 (0.5%)	125 (3.8%)	72 (2.3%)
Dementia	52 (1.2%)	121 (2.1%)	0 (0%)	0 (0%)
Personality Disorder	49 (1.1%)	162 (2.8%)	1 (0%)	4 (0.1%)
OCD	25 (0.6%)	46 (0.8%)	4 (0.1%)	6 (0.2%)

4.6 Behavioral Health Conditions by Medicare-Medicaide Dual Eligibility

In 2024, 41.5% of dual-eligible Medicaid enrollees had at least one behavioral health diagnosis, compared to 25.6% of non-dual enrollees. Further breakdowns of behavioral health conditions by Medicare Dual status are found in Table 7.

Table 7: Behavioral Health Conditions by Medicare Dual Status

N (%) with Diagnosis among Total Group

	Medicare Dual Status	
Condition	Dual Eligible	Non-Dual
Any BH	628 (41.5%)	3828 (25.6%)
Depressive	255 (16.8%)	1432 (9.6%)
Anxiety	241 (15.9%)	1681 (11.2%)
Dementia	155 (10.2%)	18 (0.1%)
Bipolar	142 (9.4%)	486 (3.2%)
Trauma Related	96 (6.3%)	654 (4.4%)
IDD	94 (6.2%)	81 (0.5%)
SUD	69 (4.6%)	542 (3.6%)
Adjustment Disorder	48 (3.2%)	404 (2.7%)
Schizophrenia	48 (3.2%)	66 (0.4%)
Personality Disorder	44 (2.9%)	172 (1.2%)
ADHD	28 (1.8%)	821 (5.5%)
Autism Spectrum	28 (1.8%)	288 (1.9%)
Impulse Control and Conduct	27 (1.8%)	252 (1.7%)
OCD	19 (1.3%)	62 (0.4%)

4.7 BH Diagnosis by Race/Ethnicity

Table 8 shows the percentage of the population in Branch County with one or more behavioral health diagnoses in 2024, by race/ethnicity. Enrollees may have received more than one diagnosis, so percentages for each condition can exceed 100% when totaled across rows.

Behavioral health diagnosis rates varied substantially by race in Branch County. The overall diagnosis rate ranged from:

American Indian or Alaska Native: 35.7%; **Asian**: 15.4%; **Black or African American**: 21.5%; **Hispanic or Latino**: 14.1%; **Native Hawaiian or Other Pacific Islander**: 20%; **Other Race**: 18.7%; **White**: 28.8%.

These findings should be interpreted with care. Diagnosis in Medicaid claims data requires access to care, willingness to seek behavioral health services, and accurate, unbiased diagnosis by providers. Cultural, linguistic, and systemic barriers may influence the patterns seen in these data. Stakeholders may use these results to explore where care access or cultural responsiveness can be improved.

Table 8: Behavioral Health Conditions by Race

N (%) with Diagnosis among Total Group

	White	Black	Hispanic	Asian	AI/AN	NH/PI	Other
Any BH	3997 (28.8%)	103 (21.5%)	175 (14.1%)	6 (15.4%)	45 (35.7%)	1 (20%)	129 (18.7%)
Anxiety	1745 (12.6%)	45 (9.4%)	57 (4.6%)	4 (10.3%)	26 (20.6%)	0 (0%)	45 (6.5%)
Depressive	1529 (11%)	40 (8.4%)	59 (4.7%)	1 (2.6%)	21 (16.7%)	1 (20%)	36 (5.2%)
ADHD	769 (5.5%)	11 (2.3%)	24 (1.9%)	1 (2.6%)	9 (7.1%)	0 (0%)	35 (5.1%)
Trauma Related	684 (4.9%)	20 (4.2%)	22 (1.8%)	1 (2.6%)	8 (6.3%)	0 (0%)	15 (2.2%)
Bipolar	582 (4.2%)	16 (3.3%)	16 (1.3%)	1 (2.6%)	4 (3.2%)	0 (0%)	9 (1.3%)
SUD	557 (4%)	18 (3.8%)	19 (1.5%)	0 (0%)	6 (4.8%)	0 (0%)	11 (1.6%)
Adjustment Disorder	401 (2.9%)	19 (4%)	19 (1.5%)	1 (2.6%)	4 (3.2%)	0 (0%)	8 (1.2%)
Autism Spectrum	276 (2%)	8 (1.7%)	11 (0.9%)	1 (2.6%)	2 (1.6%)	0 (0%)	18 (2.6%)
Impulse Control and Conduct	244 (1.8%)	12 (2.5%)	9 (0.7%)	0 (0%)	2 (1.6%)	0 (0%)	12 (1.7%)
Personality Disorder	207 (1.5%)	5 (1%)	2 (0.2%)	1 (2.6%)	1 (0.8%)	0 (0%)	0 (0%)
Dementia	164 (1.2%)	2 (0.4%)	3 (0.2%)	0 (0%)	0 (0%)	0 (0%)	4 (0.6%)
IDD	161 (1.2%)	3 (0.6%)	4 (0.3%)	0 (0%)	0 (0%)	0 (0%)	7 (1%)
Schizophrenia	99 (0.7%)	7 (1.5%)	3 (0.2%)	0 (0%)	3 (2.4%)	0 (0%)	2 (0.3%)
OCD	75 (0.5%)	4 (0.8%)	1 (0.1%)	0 (0%)	0 (0%)	0 (0%)	1 (0.1%)

5 Chronic Health Conditions

5.1 Overview and Methods

Chronic conditions have become one of the most important challenges facing health systems in the United States. More and more people are living with two or more chronic conditions. According to the Centers for Disease Control and Prevention (CDC), six in ten adults in the United States have at least one chronic disease with four in ten adults living with two or more chronic conditions.

For this study, ICD-10 diagnosis codes on 2024 Medicaid service encounters were analyzed to assess the incidence of chronic conditions of interest in the SWMBH Medicaid population. Services funded by Medicaid Health Plans or Medicaid Fee-For-Service were included, as well as any PIHP/CMH-funded service that included one of the diagnoses in question. Any diagnosis of one of the targeted chronic health conditions was included in the analysis, regardless of Medicaid funding source, service type, diagnostic position on the claim, or number of times a diagnosis was reported. ICD-10 diagnostic codes included in each of the condition groups were validated against similar population health diagnostic groupings (MDHHS's CareConnect360 and Relias's Population Performance).

For the sake of this report, please note that "economic or housing issues" is included as a chronic condition in the following tables due to its detrimental effects on physical and behavioral health, resulting in ongoing need for professional attention and resources.Economic and housing issues are in the top five social determinants of health (SDoH). SDoHs refer to non-medical factors influencing health outcomes and health quality. The National Alliance of Mental Illness (NAMI) identifies an overrepresentation of people with mental illness in the unhoused population as one in five people experiencing homelessness have a serious mental health condition. Housing and economic issues are multifaceted and encompass many other SDoH factors such as food access, safety, social and support systems.

All tables in this section include only the top 10 most prevalent targeted conditions in the population overall in Branch County.

5.2 Prevalence of Chronic Conditions

Table 9 displays rates of overall prevalence for different chronic health conditions for Branch County and the SWMBH region overall. These numbers add up to more than 100% as enrollees may receive more than one chronic health diagnosis. Percentages that are statistically significant are bolded and color-coded (red - high, green - low) depending on whether a higher or lower rate exists compared to the rest of the region. Significance was tested using chi-square tests with Bonferroni correction for repeated analysis. The most common conditions in Branch County were Obesity (14%), Hypertension (11.3%), Hyperlipidemia (7.4%).

Table 9: Chronic Health Condition Diagnosis Rates in Branch

Compared to region-wide rates, with significant differences color-coded (Bonferroni-adjusted p < 0.05)

Diagnosis	Region %	Branch County %
Any Chronic Condition	28.7%	29%
Obesity	11.4%	**14%**
Hypertension	11.4%	11.3%
High Cholesterol	7.8%	7.4%
Diabetes	5.9%	6.2%
Asthma	5.5%	5.1%
Morbid Obesity	4.7%	4.8%
COPD	3.1%	**3.9%**
Coronary Artery Disease	2.1%	**2.5%**
Migraine	2.5%	2.3%
Transient Ischemic Attack	1.9%	2.2%

5.3 Chronic Conditions by Age Groups and Dual-Eligible Status

5.3.1 Age

In Branch County, the prevalence of chronic conditions varied by age group. Among the <18 population, 9.9% had a chronic condition, most commonly Asthma (4.3%), Obesity (3.1%), Epilepsy (0.8%).

In the 65+ group, 50.8% were diagnosed with at least one chronic condition. The top diagnoses in this group were Hypertension (35.6%), Hyperlipidemia (21.2%), Diabetes (20.3%).

Finally, in the 18-64 individuals, 39.9% had one or more chronic health conditions, with the most common being Obesity (21.7%), Hypertension (16%), Hyperlipidemia (10.9%). A further breakdown of chronic condition prevalence by age is found in Table 10.

Table 10: Chronic Conditions by Age Group
N (%) with Condition among Total Group

Diagnosis Group	18-64	65+	<18
Any Chronic Condition	3523 (39.9%)	624 (50.8%)	634 (9.9%)
Hypertension	1410 (16%)	437 (35.6%)	21 (0.3%)
High Cholesterol	960 (10.9%)	260 (21.2%)	6 (0.1%)
Diabetes	746 (8.4%)	250 (20.3%)	19 (0.3%)
COPD	442 (5%)	195 (15.9%)	1 (0%)
Obesity	1920 (21.7%)	194 (15.8%)	199 (3.1%)
Coronary Artery Disease	273 (3.1%)	129 (10.5%)	2 (0%)
Transient Ischemic Attack	247 (2.8%)	114 (9.3%)	2 (0%)
Morbid Obesity	685 (7.8%)	77 (6.3%)	23 (0.4%)
Asthma	531 (6%)	43 (3.5%)	273 (4.3%)
Migraine	335 (3.8%)	10 (0.8%)	37 (0.6%)

5.3.2 Dual Eligibility

In Branch County, chronic condition prevalence and common diagnoses varied by age group and Medicare dual-eligibility status.

Among non-dual <18 enrollees, 9.9% had one or more chronic conditions, with the most common being Asthma (4.3%), Obesity (3.1%), Epilepsy (0.8%).

In the 18-64 group, non-dual members had a 38.3% chronic condition rate. The top diagnoses were Obesity (20.9%), Hypertension (14.6%), Hyperlipidemia (9.7%).

Dual-eligible older adults (65+) had the highest rate of chronic conditions at 62.5%, with the leading diagnoses being Hypertension (44.5%), Hyperlipidemia (26.6%), Diabetes (25.4%). A further breakdown of chronic condition prevalence by Medicare Dual status is found in Table 11 below.

Table 11: Chronic Conditions by Medicare Dual Status and Age Group

N (%) with Condition among Total Group

Diagnosis Group	Dual Eligible 18-64	Dual Eligible 65+	Non-Dual 18-64	Non-Dual 65+
Any Chronic Condition	397 (58%)	519 (62.5%)	3126 (38.3%)	105 (26.3%)
Hypertension	222 (32.4%)	369 (44.5%)	1188 (14.6%)	68 (17%)
High Cholesterol	170 (24.8%)	221 (26.6%)	790 (9.7%)	39 (9.8%)
Diabetes	148 (21.6%)	211 (25.4%)	598 (7.3%)	39 (9.8%)
COPD	100 (14.6%)	167 (20.1%)	342 (4.2%)	28 (7%)
Obesity	214 (31.2%)	158 (19%)	1706 (20.9%)	36 (9%)
Coronary Artery Disease	52 (7.6%)	112 (13.5%)	221 (2.7%)	17 (4.3%)
Transient Ischemic Attack	48 (7%)	101 (12.2%)	199 (2.4%)	13 (3.3%)
Morbid Obesity	96 (14%)	63 (7.6%)	589 (7.2%)	14 (3.5%)
Asthma	52 (7.6%)	37 (4.5%)	479 (5.9%)	6 (1.5%)
Migraine	30 (4.4%)	8 (1%)	305 (3.7%)	2 (0.5%)

5.3.3 Multiple Chronic Conditions in the Adult Dual Eligible Population

Table 12 and Figure 6 show that Dual-eligible members are more likely to have multiple chronic conditions. 28.1% of Dual-eligible members have 5 or more chronic conditions, compared to 4.9% of Non-dual members — a difference of 23.2 percentage points.

Table 12: Chronic Condition Burden by Dual Eligibility

Count (Percent) of individuals by number of chronic conditions

Number of Chronic Conditions	Dual Eligible	Non-Dual
0	599 (39.5%)	5320 (62.2%)
1	19 (1.3%)	182 (2.1%)
2	183 (12.1%)	1162 (13.6%)
3	154 (10.2%)	688 (8%)
4	134 (8.8%)	464 (5.4%)
5+	426 (28.1%)	735 (8.6%)

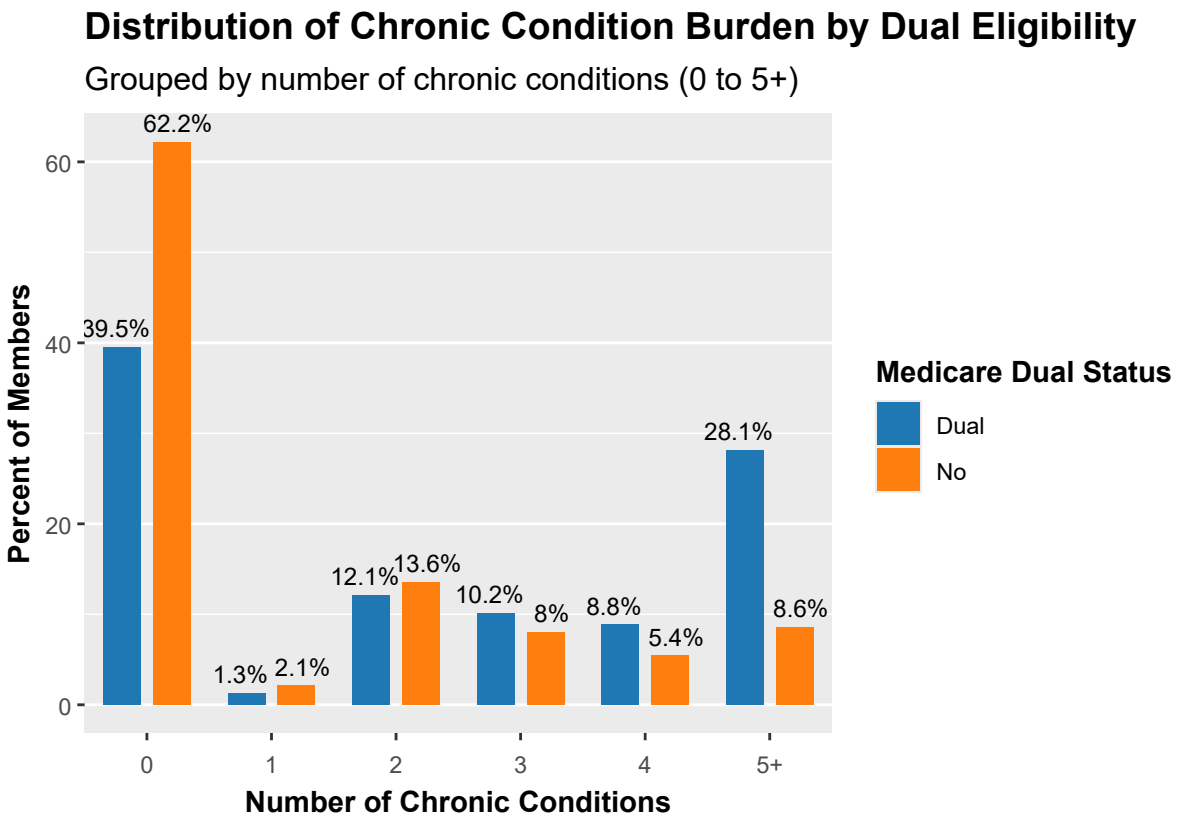

Figure 6. Percent of adult Medicaid enrollees grouped by the number of chronic physical health conditions, stratified by Medicare dual eligibility status.

Among enrollees with a behavioral health diagnosis, 56.1% had at least one chronic physical health condition, compared to 19% of those without a behavioral health diagnosis.

5.4 Chronic conditions in persons without and with BH Diagnoses

Table 13 shows percentages of enrollees who had various chronic health conditions reported in 2024, comparing individuals without and with behavioral health diagnoses. Individuals in the study with a behavioral health diagnosis in 2024 were significantly more likely to have been diagnosed with one or more of the chronic health conditions included in this study, compared to those without a reported behavioral health diagnosis. Risk ratios were calculated for each condition for individuals with a behavioral health diagnosis.

Table 13: Chronic Conditions by BH Diagnosis Status

Percent with condition by BH status and associated risk ratio

Chronic Health Condition	No BH Diagnosis	Any BH Diagnosis	Risk Ratio for Persons with BH Diagnosis
Any Chronic Condition	19.0	56.1	3.0
Obesity	8.7	28.5	3.3
Hypertension	6.9	23.2	3.4
High Cholesterol	4.6	15.0	3.3
Diabetes	4.1	11.7	2.9
Asthma	3.1	10.7	3.5
Morbid Obesity	2.5	10.7	4.3
COPD	2.4	7.9	3.3
Migraine	1.0	5.8	5.8
Coronary Artery Disease	1.6	4.7	2.9
Transient Ischemic Attack	1.5	4.2	2.8

5.5 Chronic Conditions by Race/Ethnicity

Table 14 shows rates of chronic physical health conditions varied by race/ethnicity. For example, 30.9% of White enrollees had at least one chronic condition reported in encounters, compared to 20.3% of Black enrollees and 17.4% of Hispanic enrollees.

Table 14: Chronic Conditions by Race

N (%) with Condition among Total Group

	White	Black	Hispanic	Asian	AI/AN	NH/PI	Other
Any Chronic Condition	4293 (30.9%)	97 (20.3%)	217 (17.4%)	9 (23.1%)	45 (35.7%)	2 (40%)	118 (17.1%)
Obesity	2091 (15.1%)	43 (9%)	102 (8.2%)	4 (10.3%)	18 (14.3%)	0 (0%)	55 (8%)
Hypertension	1717 (12.4%)	32 (6.7%)	60 (4.8%)	3 (7.7%)	16 (12.7%)	0 (0%)	40 (5.8%)
High Cholesterol	1128 (8.1%)	17 (3.6%)	37 (3%)	2 (5.1%)	15 (11.9%)	0 (0%)	27 (3.9%)
Diabetes	920 (6.6%)	12 (2.5%)	50 (4%)	1 (2.6%)	11 (8.7%)	0 (0%)	21 (3%)
Asthma	762 (5.5%)	25 (5.2%)	38 (3.1%)	1 (2.6%)	9 (7.1%)	0 (0%)	12 (1.7%)
Morbid Obesity	732 (5.3%)	13 (2.7%)	17 (1.4%)	0 (0%)	8 (6.3%)	0 (0%)	15 (2.2%)
COPD	604 (4.3%)	12 (2.5%)	6 (0.5%)	1 (2.6%)	6 (4.8%)	0 (0%)	9 (1.3%)
Coronary Artery Disease	370 (2.7%)	6 (1.3%)	11 (0.9%)	0 (0%)	4 (3.2%)	0 (0%)	13 (1.9%)
Migraine	348 (2.5%)	4 (0.8%)	17 (1.4%)	0 (0%)	6 (4.8%)	0 (0%)	7 (1%)
Transient Ischemic Attack	335 (2.4%)	3 (0.6%)	8 (0.6%)	0 (0%)	4 (3.2%)	0 (0%)	13 (1.9%)

5.6 Chronic Conditions and Inpatient (IP) Hospitalization Risk

Figure 7 shows that individuals with 0 chronic conditions had an average of 0.2 inpatient days, compared to 12 days among those with 15 chronic conditions.

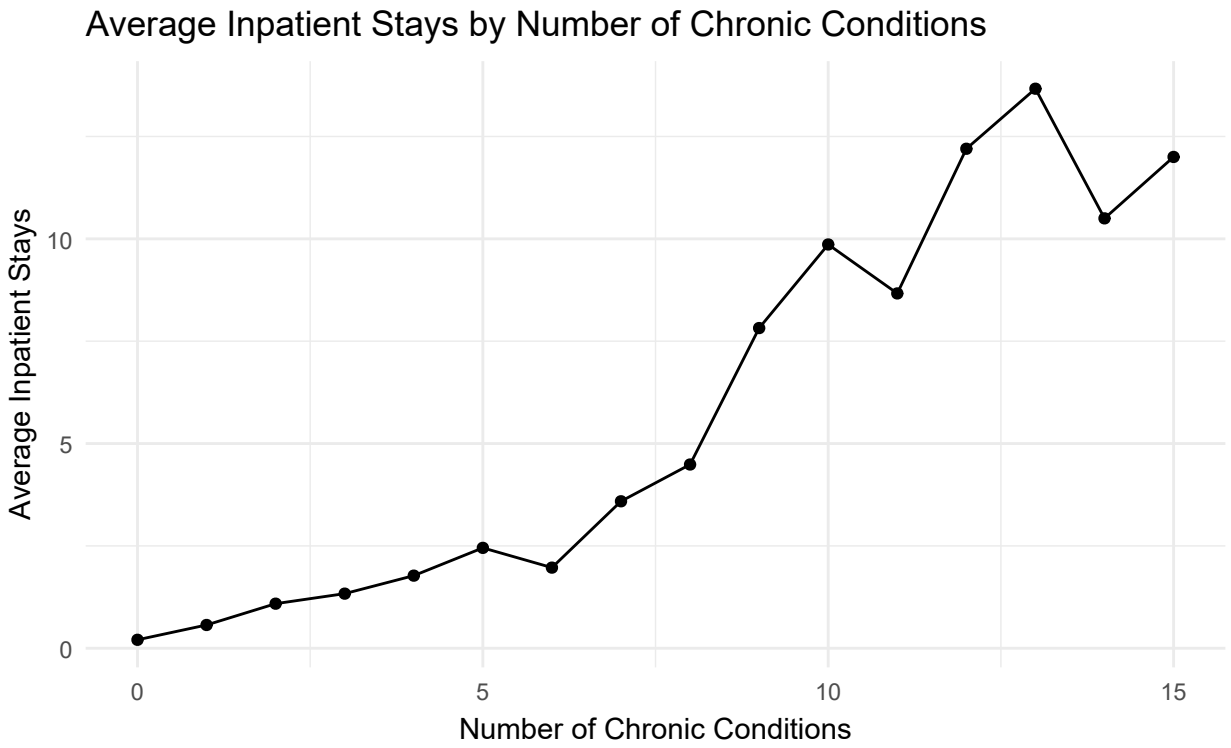

Figure 7. Average number of inpatient stays among Medicaid enrollees, stratified by the total number of chronic health conditions.

To identify the chronic health conditions most strongly associated with inpatient hospital stays, a two-step statistical approach was used.

First, LASSO logistic regression was applied. This method selects the most important predictors from a large set of variables by applying a penalty to reduce the influence of less relevant or highly correlated conditions. This approach helps produce a more stable and interpretable model.

To ensure the robustness of the findings, the variable selection process was repeated 100 times using bootstrapping — sampling with replacement from the original data. The frequency with which each condition was selected across these samples was recorded.

For each condition selected by the final model, odds ratios and 95% confidence intervals were calculated to quantify the strength and precision of their association with inpatient stays. An odds ratio greater than 1 indicates increased odds of hospitalization for individuals with that condition. Odds ratios with confidence intervals can be found in Table 15.

Table 15: Top Predictors of Inpatient Stays

Based on LASSO logistic regression with 500 bootstrap samples

Chronic Condition	Odds Ratio (95% CI)	Frequency
DiabetesYes	1.37 (1.09–1.70)	100.0%
COPDYes	1.92 (1.52–2.42)	100.0%
HeartFailureYes	1.90 (1.37–2.63)	100.0%
ChronicKidneyYes	2.16 (1.56–2.97)	100.0%
EpilepsyYes	2.47 (1.74–3.46)	100.0%
HousingEconomicYes	4.00 (3.03–5.25)	100.0%
ValvularHeartYes	2.39 (1.58–3.58)	100.0%
TobaccoYes	2.25 (1.86–2.72)	100.0%

5.7 Ambulatory Care Sensitive Conditions

Ambulatory care sensitive conditions (ACSCs) are those that have potential complications that are preventable by routine, non-emergency medical care. For example, diabetes can cause many serious complications if untreated or uncontrolled; however, these complications almost always can be prevented by proper treatment outside of an emergency setting. The State of Michigan estimates that in 2022, 23.5% of hospitalizations statewide were related to ACSCs (source: vitalstats.michigan.gov accessed 6/23/25). This analysis looked at a selected group of ACSCs: hypertension, diabetes, asthma, urinary tract infections, and congestive heart failure.

5.7.1 Prevalence of ACSCs

Table 16 displays rates of overall prevalence for different ACSCs for Branch County and the SWMBH region overall. These numbers add up to more than 100% as enrollees may receive more than one diagnosis. Percentages that are statistically significant are bolded and color-coded (red - high, green - low) depending on whether a higher or lower rate exists compared to the rest of the region. Significance was tested using chi-square tests with Bonferroni correction for repeated analysis.

Table 16: ACSC Rates in Branch

Compared to region-wide rates, with significant differences color-coded (Bonferroni-adjusted p < 0.05)

Diagnosis	Region %	Branch County %
Any ACSC	19.6%	19.8%
Hypertension	11.4%	11.3%
Diabetes	5.9%	6.2%
Asthma	5.5%	5.1%
Heart Failure	1.8%	1.8%
UTI	2.6%	2.8%

Figure 8 displays the prevalence of ACSCs in the county population. This distribution highlights key areas where preventive care and chronic disease management may have the greatest impact in reducing avoidable hospital use.

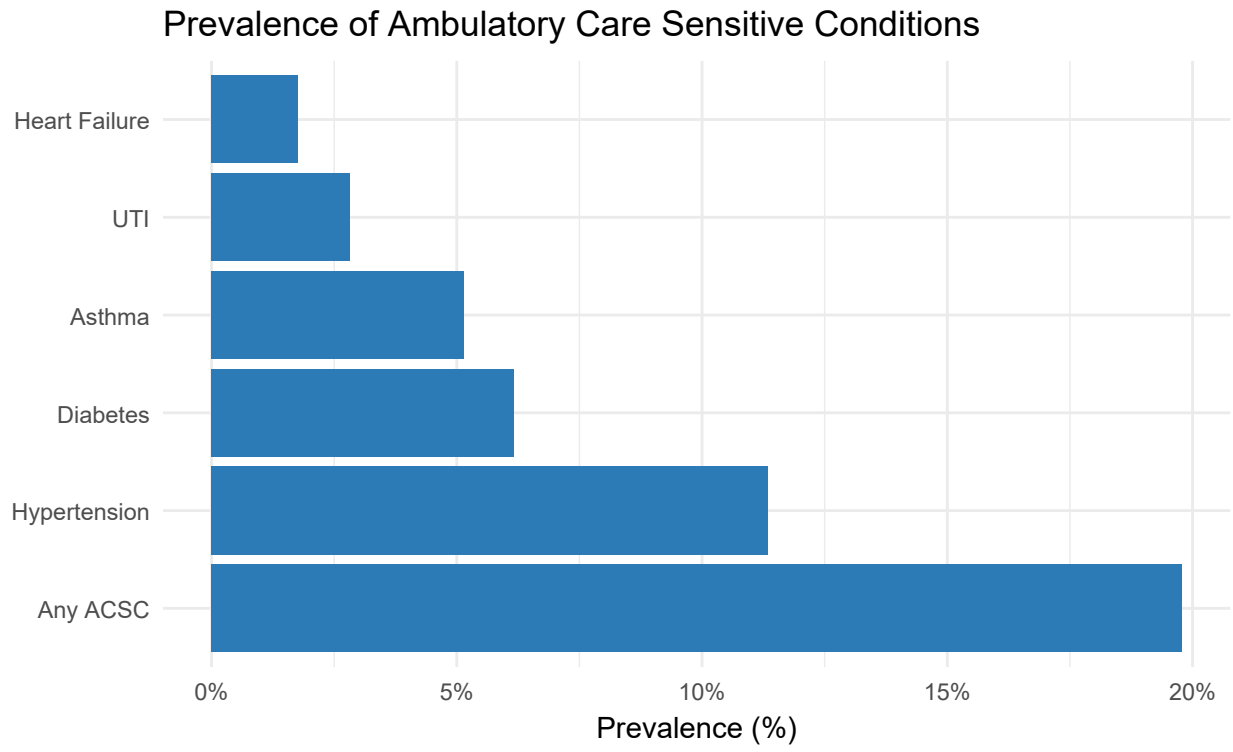

Figure 8. Prevalence of selected ACSCs among Medicaid enrollees.

Individuals with behavioral health diagnoses experience a notably higher burden of ACSCs compared to those without such diagnoses, highlighting the intersection of behavioral and physical health challenges. This suggests that integrated care approaches addressing both behavioral health and chronic disease management could improve outcomes and reduce avoidable hospitalizations in this group.

Table 17 details the specific prevalence rates of key ACSCs for the overall population, as well as stratified by behavioral health diagnosis status.

Table 17: Selected Conditions by Behavioral Health Diagnosis

N (%) with Condition among Total Group

	Behavioral Health Diagnosis	
Condition	**No**	**Yes**
Any ACSC	1557 (13%)	1701 (38.2%)
Asthma	372 (3.1%)	475 (10.7%)
Diabetes	494 (4.1%)	521 (11.7%)
Heart Failure	132 (1.1%)	159 (3.6%)
Hypertension	832 (6.9%)	1036 (23.2%)
UTI	227 (1.9%)	238 (5.3%)

The prevalence of key chronic and acute conditions varies notably across racial groups within the county population as seen in Table 18. For example, hypertension affects between 0.0% and 12.7% of individuals depending on race, while diabetes prevalence ranges from 0.0% to 8.7%. Similarly, asthma, heart failure, and urinary tract infections show meaningful variation, reflecting disparities in social determinants of health and access to care. These differences underscore the importance of tailored public health strategies and culturally informed interventions to address the unique health needs of each community subgroup.

Table 18: Selected Conditions by Race

N (%) with Condition among Total Group

	Race/Ethnicity Groups						
Condition	**White**	**Black**	**Hispanic**	**Asian**	**AI/AN**	**NH/PI**	**Other**
Any ACSC	2940 (21.2%)	71 (14.9%)	138 (11.1%)	5 (12.8%)	30 (23.8%)	2 (40%)	72 (10.4%)
Hypertension	1717 (12.4%)	32 (6.7%)	60 (4.8%)	3 (7.7%)	16 (12.7%)	0 (0%)	40 (5.8%)
Diabetes	920 (6.6%)	12 (2.5%)	50 (4%)	1 (2.6%)	11 (8.7%)	0 (0%)	21 (3%)
Asthma	762 (5.5%)	25 (5.2%)	38 (3.1%)	1 (2.6%)	9 (7.1%)	0 (0%)	12 (1.7%)
UTI	408 (2.9%)	11 (2.3%)	26 (2.1%)	0 (0%)	6 (4.8%)	1 (20%)	13 (1.9%)
Heart Failure	269 (1.9%)	4 (0.8%)	8 (0.6%)	0 (0%)	2 (1.6%)	0 (0%)	8 (1.2%)

Figure 9 illustrates the relationship between the number of ACSCs an individual has and their average inpatient hospital days. As the count of ACSCs increases from 0 to 6, there is a clear upward trend in

average inpatient days, rising from approximately 0.3 days to 11 days. This pattern suggests that individuals with multiple ACSCs experience greater inpatient utilization, highlighting the potential burden of co-occurring chronic conditions on hospital stays.

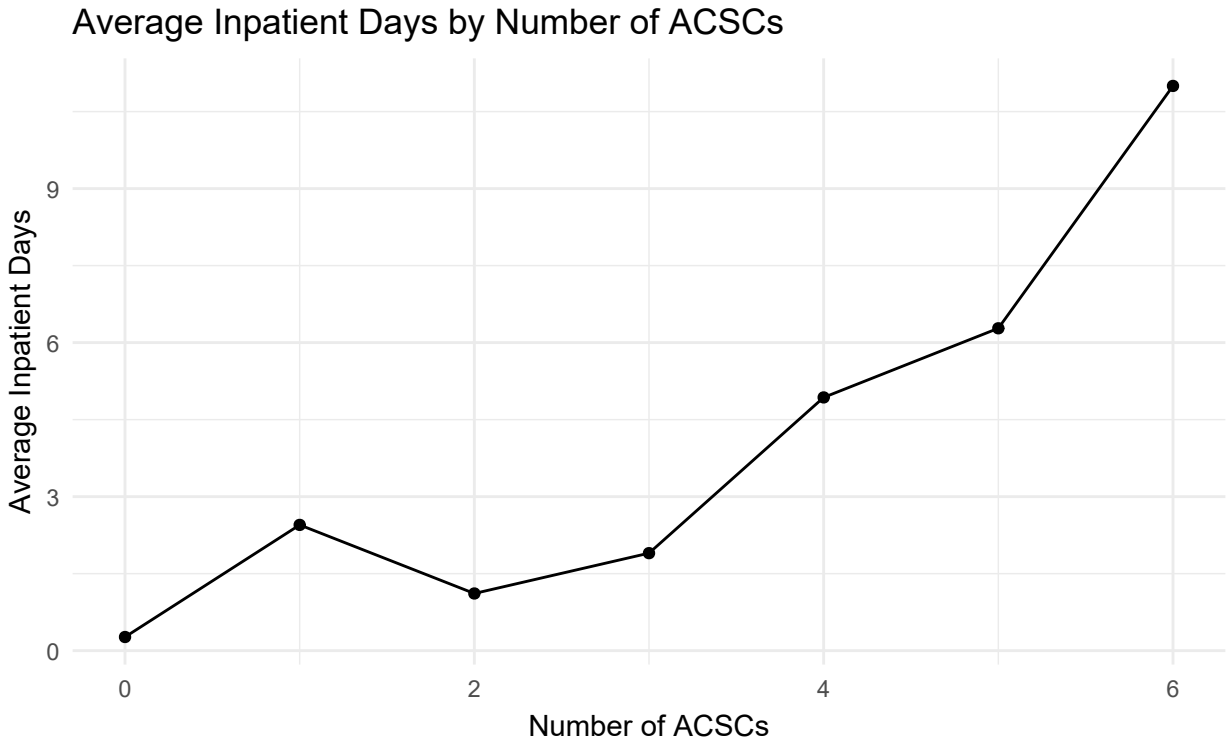

Figure 9. This figure illustrates the average number of inpatient days among Medicaid enrollees by the number of ACSCs they have

6 Inpatient and Emergency Department Utilization

6.1 Method

Medicaid Inpatient and emergency department (ED) encounters for 2024 were analyzed to assess utilization and identify patterns of use of these intensive, high-cost services in the Branch County Medicaid population. PIHP and/or CMH-funded behavioral health inpatient services (including behavioral health state inpatient), as well as acute medical inpatient and ED services funded by Medicaid Health Plans and Medicaid Fee-For-Service were included. Note that ED visits and medical inpatient days with a primary substance use service diagnosis were not available for this report, due to 42 CFR Part 2 privacy protections. Because of this, ED and medical inpatient statistics for persons with substance use disorders will be under-represented.

For this analysis, an ED visit or inpatient day was considered “behavioral” if the principal service diagnosis code associated with the claim was behavioral, and “medical” if not. If multiple ED claims were billed for the same day, with both behavioral and medical principal service diagnoses, the visit was counted in both categories, which occurred in less than 2% of ED visits.

6.2 Overall Statistics

In the population, 7%% have had any inpatient medical episode, and 1%% have had any behavioral health inpatient episode. Similarly, 29%% have had any medical emergency department visit, and 2%% have had any behavioral health emergency department visit. On average, the population experienced 0.15 behavioral health inpatient days and 0.56 medical inpatient days. Emergency department visits averaged 0.03 for behavioral health and 0.6 for medical.

6.3 Utilization by Age Range

6.3.1 Emergency Department Visits

As seen in Figure 10, emergency department utilization varied by age group. For example, in the youngest age bracket (50-59), 32% had an ED visit, with an average of 0.89 visits. In contrast, the oldest age group (0-9) had 28% with an average of 0.45 visits.

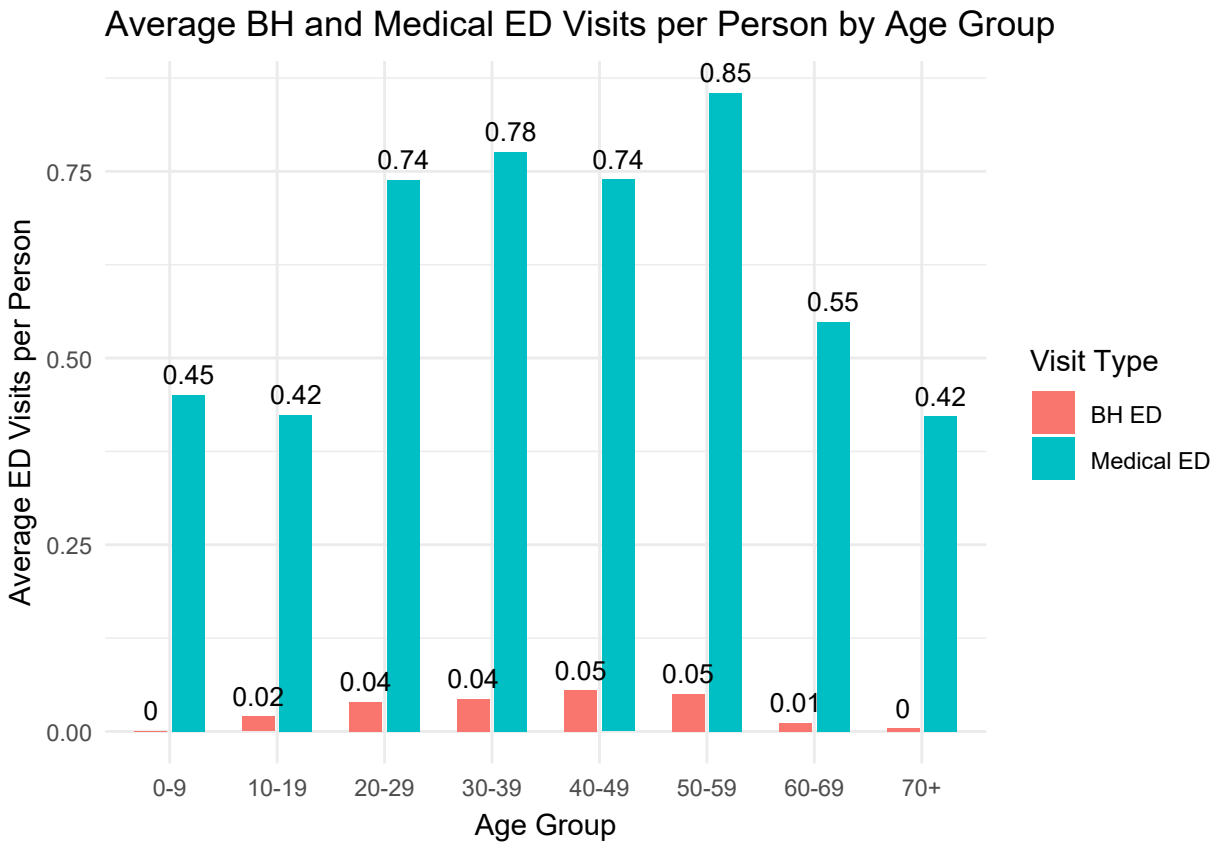

Figure 10. This figure displays the average number of ED visits per Medicaid enrollee stratified by age group and visit type.

6.3.2 Inpatient Utilization

Similarly, Figure 11 shows that inpatient hospitalization showed age-related differences: in the youngest bracket, 10% experienced hospitalization, averaging 1.11 days. The oldest group had 9% hospitalized with an average of 0.42 inpatient days.

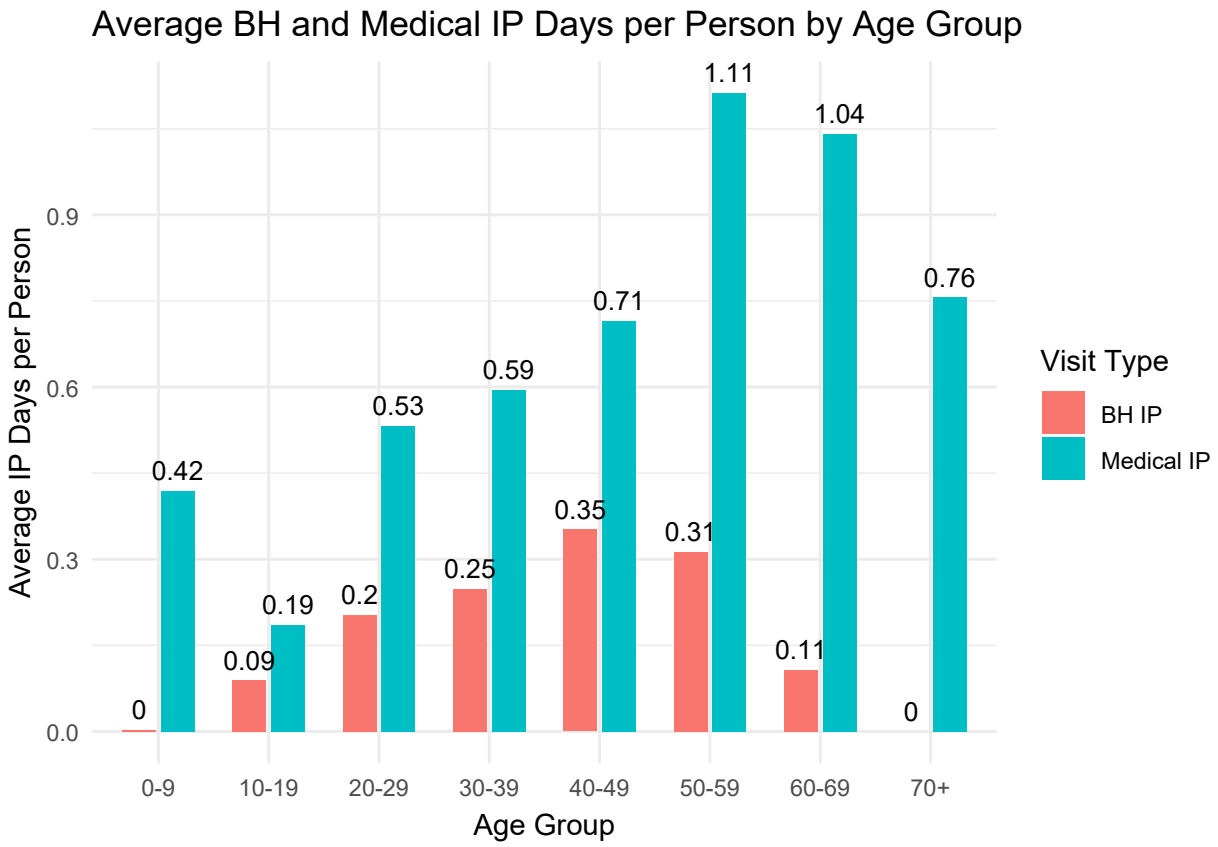

Figure 11. This figure displays the average number of IP stays per Medicaid enrollee stratified by age group and days type.

6.4 Utilization Among Individuals with Behavioral Health Diagnoses

6.4.1 Medical Emergency Department Visits

Figure 13 and Table 19 show the average number of medical ED visits per person, stratified by age group and behavioral health diagnosis category and shaded to highlight higher average visit rates. This allows for comparison of ED utilization patterns across age groups and between individuals with different behavioral health diagnosis categories.

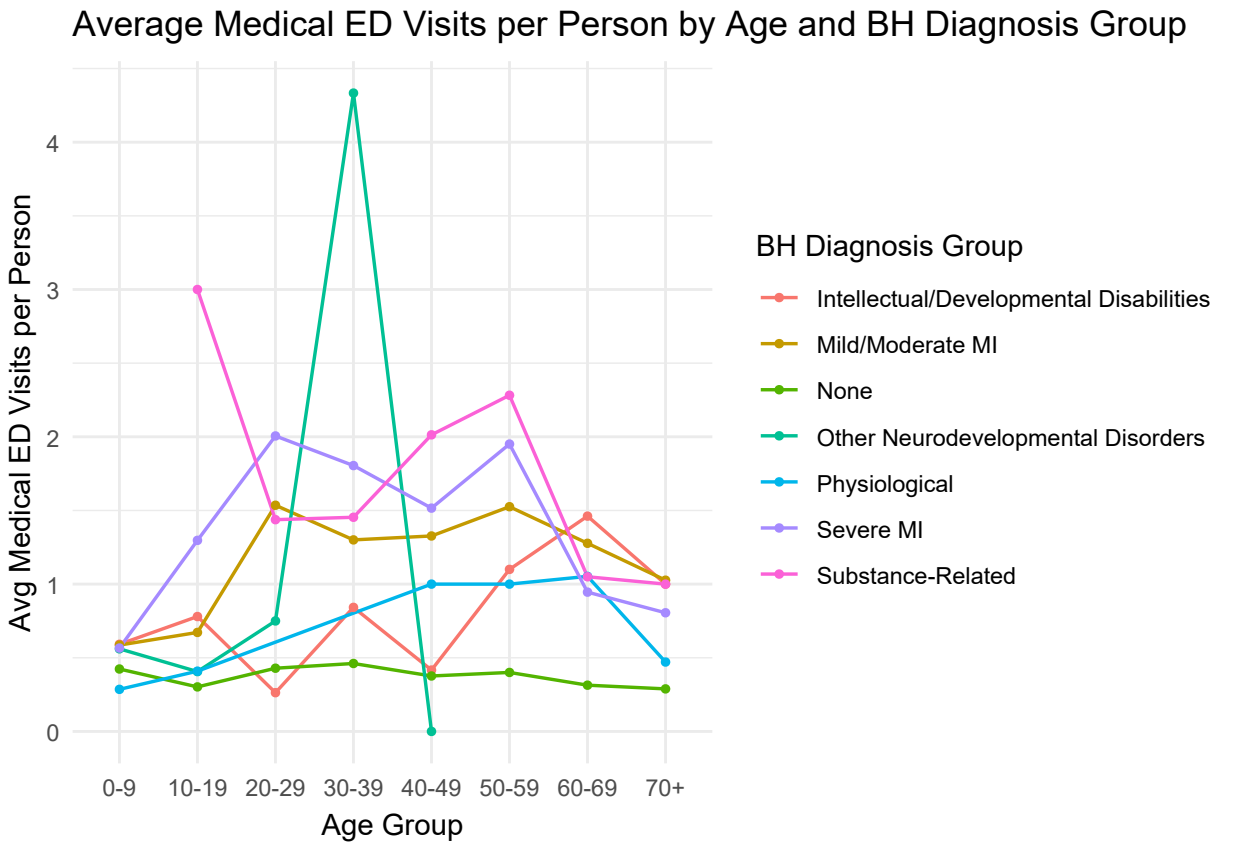

Figure 12. Average number of medical ED visits per Medicaid enrollee stratified by age group and BH diagnosis group.

Table 19: Average Medical ED Visits per Person

By Age Group and BH Diagnosis Group

Age Group	None	Intellectual/Developmental Disabilities	Mild/Moderate MI	Other Neurodevelopmental Disorders	Physiological	Severe MI	Substance-Related
0-9	0.42	0.59	0.59	0.56	0.29	0.57	0.00
10-19	0.30	0.78	0.67	0.41	0.41	1.30	3.00
20-29	0.43	0.26	1.54	0.75	0.00	2.01	1.44
30-39	0.46	0.84	1.30	4.33	0.00	1.80	1.45
40-49	0.38	0.42	1.33	0.00	1.00	1.52	2.01
50-59	0.40	1.10	1.53	0.00	1.00	1.95	2.28
60-69	0.31	1.46	1.28	0.00	1.05	0.95	1.05
70+	0.29	1.00	1.03	0.00	0.47	0.81	1.00

Table 20 below summarized the overall risk ratios for medical ED visits by BH diagnosis group, using individuals with no BH diagnosis as the reference. For each BH group, the average number of ED visits per person is compared to the reference group to produce a risk ratio, which quantifies how much higher (or lower) ED use is relative to individuals without a BH diagnosis. These risk ratios help identify which BH groups are associated with elevated ED utilization.

Table 20: Risk Ratios for Medical ED Visits
Compared to individuals with no BH diagnosis

BH Diagnosis Group	Avg Visits (BH Group)	Avg Visits (No BH)	Risk Ratio
Intellectual/Developmental Disabilities	0.67	0.38	1.75
Mild/Moderate MI	1.12	0.38	2.92
Other Neurodevelopmental Disorders	0.57	0.38	1.48
Physiological	0.55	0.38	1.44
Severe MI	1.55	0.38	4.04
Substance-Related	1.68	0.38	4.38

6.4.2 Behavioral Emergency Department Visits

Figure 14 and Table 21 below show the average number of behavioral ED visits per person, stratified by age group and behavioral health diagnosis category and shaded to highlight higher average visit rates. This allows for comparison of ED utilization patterns across age groups and between individuals with different behavioral health diagnosis categories.

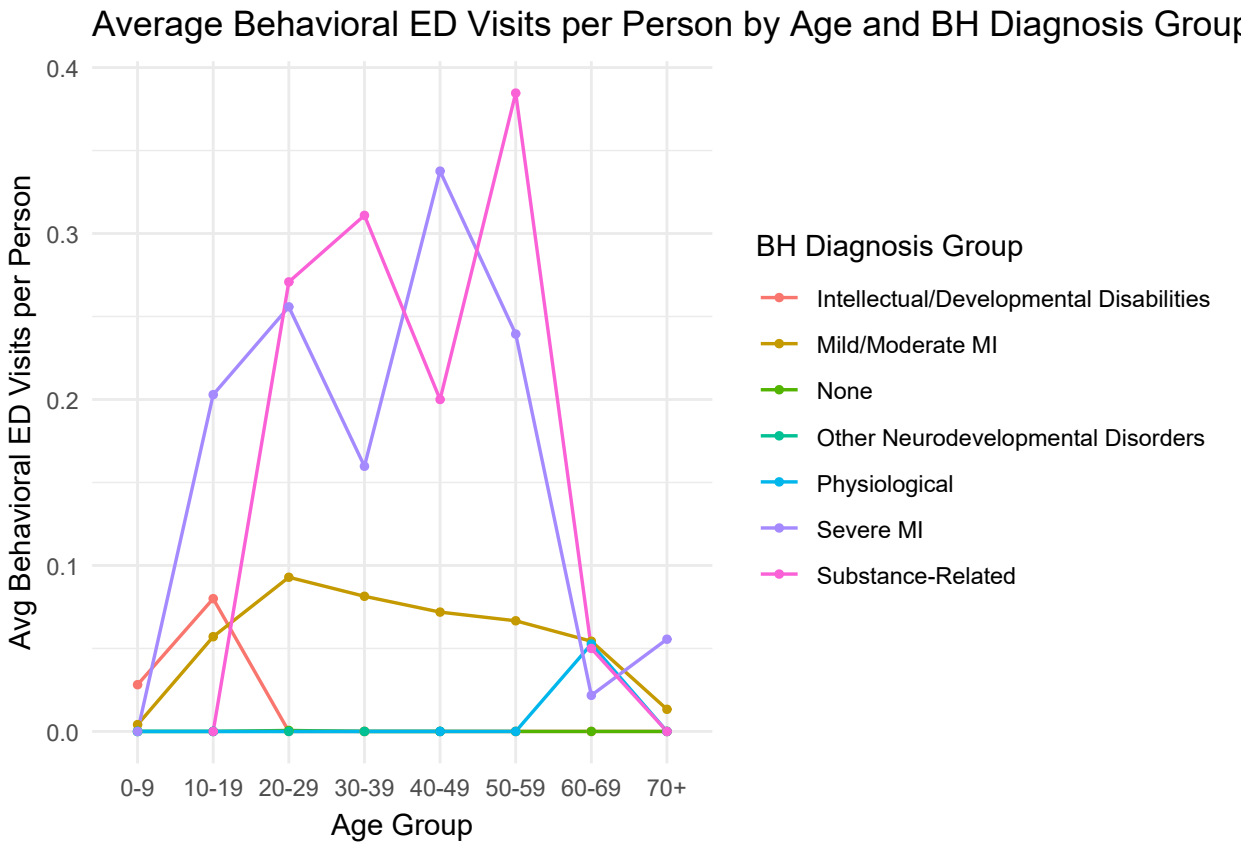

Figure 13. Average number of BH ED visits per Medicaid enrollee stratified by age group and BH diagnosis group.

Table 21: Average Behavioral ED Visits per Person

By Age Group and BH Diagnosis Group

Age Group	None	Intellectual/Developmental Disabilities	Mild/Moderate MI	Other Neurodevelopmental Disorders	Physiological	Severe MI	Substance-Related
0-9	0.00	0.03	0.00	0.00	0.00	0.00	0.00
10-19	0.00	0.08	0.06	0.00	0.00	0.20	0.00
20-29	0.00	0.00	0.09	0.00	0.00	0.26	0.27
30-39	0.00	0.00	0.08	0.00	0.00	0.16	0.31
40-49	0.00	0.00	0.07	0.00	0.00	0.34	0.20
50-59	0.00	0.00	0.07	0.00	0.00	0.24	0.38
60-69	0.00	0.00	0.05	0.00	0.05	0.02	0.05
70+	0.00	0.00	0.01	0.00	0.00	0.06	0.00

6.4.3 Medical Inpatient Days

Figure 15 and Table 22 below show the average number of medical inpatient days per person, stratified by age group and behavioral health diagnosis category and shaded to highlight higher average days. This allows for comparison of inpatient utilization patterns across age groups and between individuals with different behavioral health diagnosis categories.

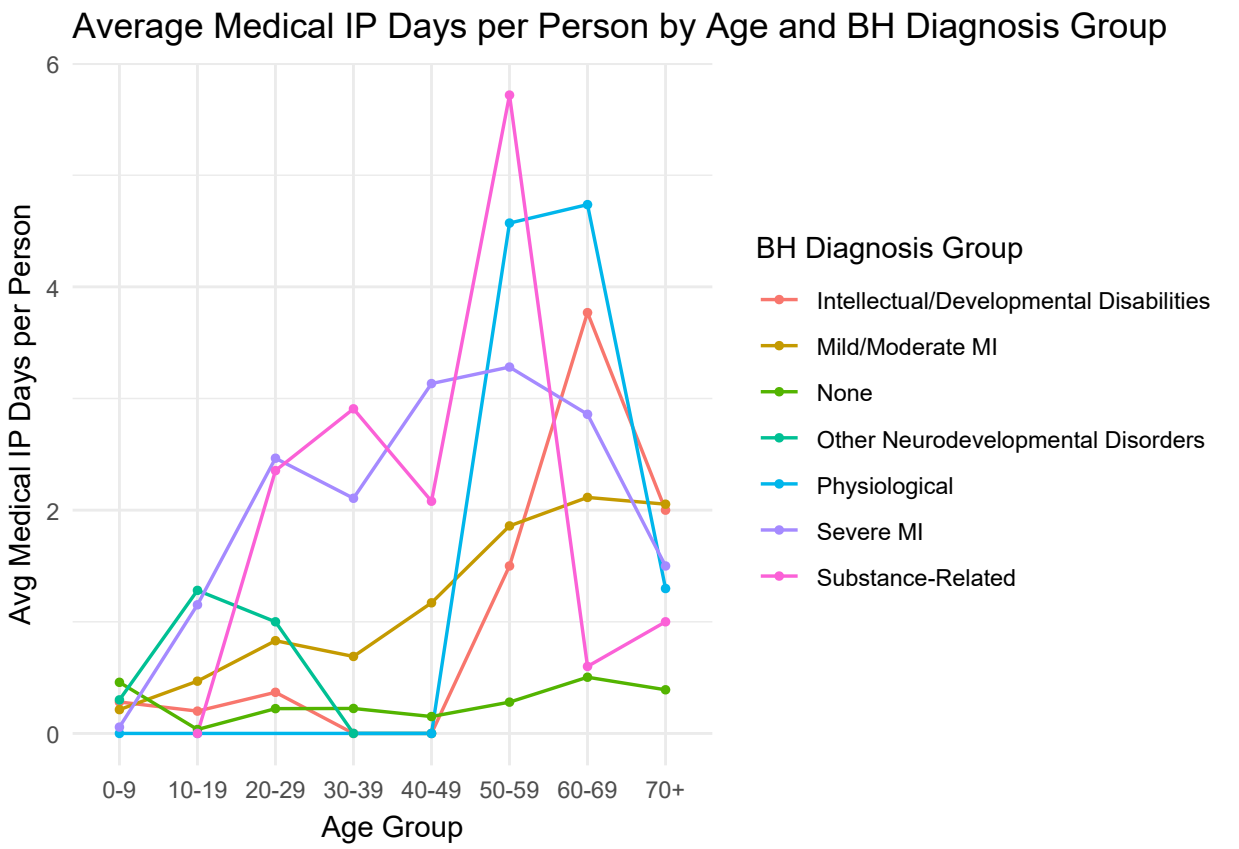

Figure 14. Average number of medical inpatient days per Medicaid enrollee stratified by age group and BH diagnosis group.

Table 22: Average Medical Inpatient Days per Person

By Age Group and BH Diagnosis Group

Age Group	None	Intellectual/Developmental Disabilities	Mild/Moderate MI	Other Neurodevelopmental Disorders	Physiological	Severe MI	Substance-Related
0-9	0.46	0.28	0.21	0.30	0.00	0.06	0.00
10-19	0.04	0.20	0.47	1.28	0.00	1.15	0.00
20-29	0.22	0.37	0.83	1.00	0.00	2.47	2.35
30-39	0.22	0.00	0.69	0.00	0.00	2.11	2.91
40-49	0.15	0.00	1.17	0.00	0.00	3.13	2.08
50-59	0.28	1.50	1.86	0.00	4.57	3.28	5.72
60-69	0.50	3.77	2.11	0.00	4.74	2.86	0.60
70+	0.39	2.00	2.05	0.00	1.30	1.50	1.00

Table 23 below summarizes the overall risk ratios for medical inpatient days by BH diagnosis group, using individuals with no BH diagnosis as the reference. For each BH group, the average number of inpatient days per person is compared to the reference group to produce a risk ratio, which quantifies how much higher (or lower) ED use is relative to individuals without a BH diagnosis. These risk ratios help identify which BH groups are associated with elevated inpatient utilization.

Table 23: Risk Ratios for Medical Inpatient Days
Compared to individuals with no BH diagnosis

BH Diagnosis Group	Avg Days (BH Group)	Avg Days (No BH)	**Risk Ratio**
Intellectual/Developmental Disabilities	0.53	0.27	1.99
Mild/Moderate MI	0.94	0.27	3.50
Other Neurodevelopmental Disorders	0.49	0.27	1.81
Physiological	1.60	0.27	5.94
Severe MI	2.31	0.27	8.60
Substance-Related	2.78	0.27	10.33

6.4.4 Behavioral Inpatient Utilization

Figure 16 and Table 24 below show the average number of behavioral inpatient days per person, stratified by age group and behavioral health diagnosis category and shaded to highlight higher average days. This allows for comparison of behavioral IP utilization patterns across age groups and between individuals with different behavioral health diagnosis categories.

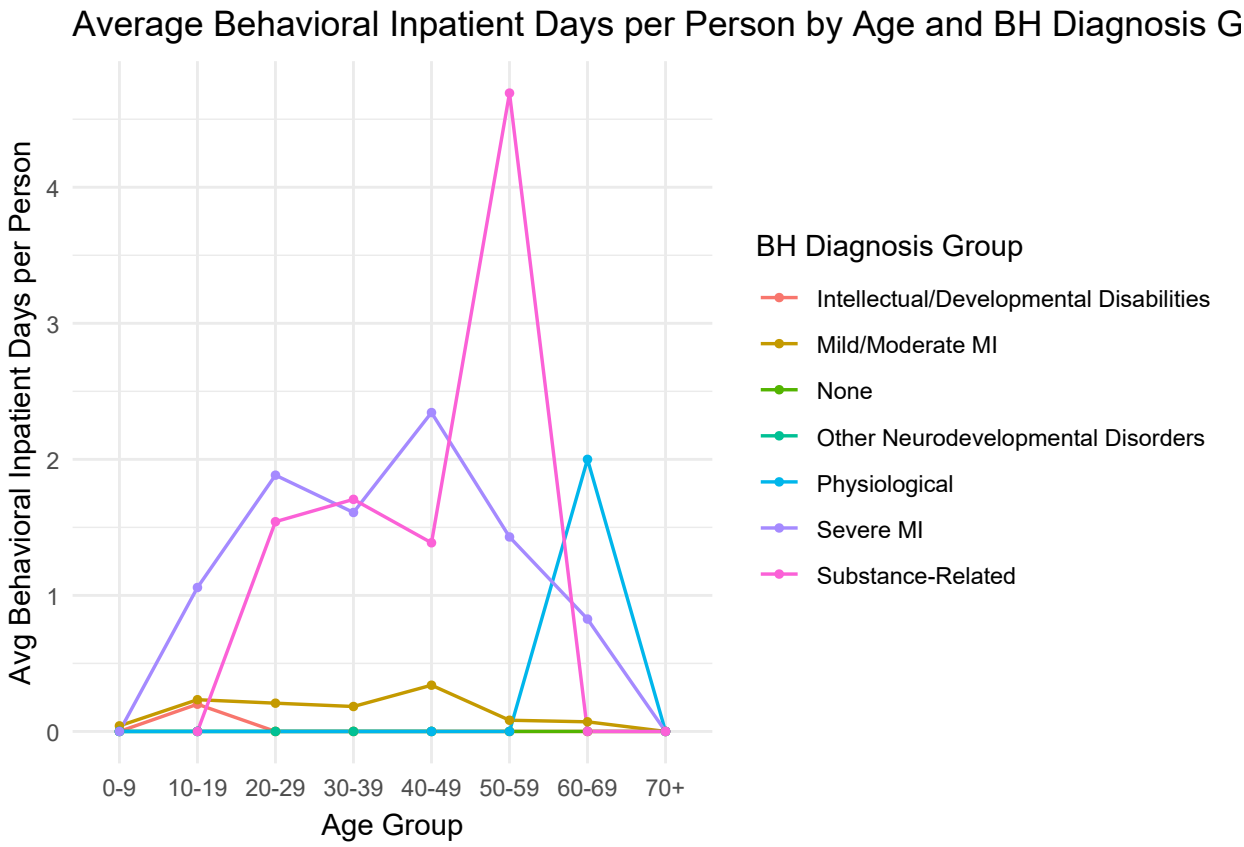

Figure 15. Average number of BH inpatient days per Medicaid enrollee stratified by age group and BH diagnosis group.

Table 24: Average Behavioral Inpatient Days per Person

By Age Group and BH Diagnosis Group

Age Group	None	Intellectual/Developmental Disabilities	Mild/Moderate MI	Other Neurodevelopmental Disorders	Physiological	Severe MI	Substance-Related
0-9	0.00	0.00	0.04	0.00	0.00	0.00	0.00
10-19	0.00	0.20	0.23	0.00	0.00	1.06	0.00
20-29	0.00	0.00	0.21	0.00	0.00	1.88	1.54
30-39	0.00	0.00	0.18	0.00	0.00	1.61	1.71
40-49	0.00	0.00	0.34	0.00	0.00	2.34	1.39
50-59	0.00	0.00	0.08	0.00	0.00	1.43	4.69
60-69	0.00	0.00	0.07	0.00	2.00	0.83	0.00
70+	0.00	0.00	0.00	0.00	0.00	0.00	0.00

6.5 Medical Emergency Department and Hospital Utilization by Types of Behavioral Health Diagnosis

Figure 17 below shows medical inpatient days and medical ED visits based on each individual's primary (most frequently reported) behavioral health diagnosis type. The y axis displays average medical inpatient days per person by primary behavioral health diagnosis type, and the x axis displays average medical ED

visits per person by primary behavioral health diagnosis type. Graph includes top 8 most common behavioral diagnosis types in Branch County.

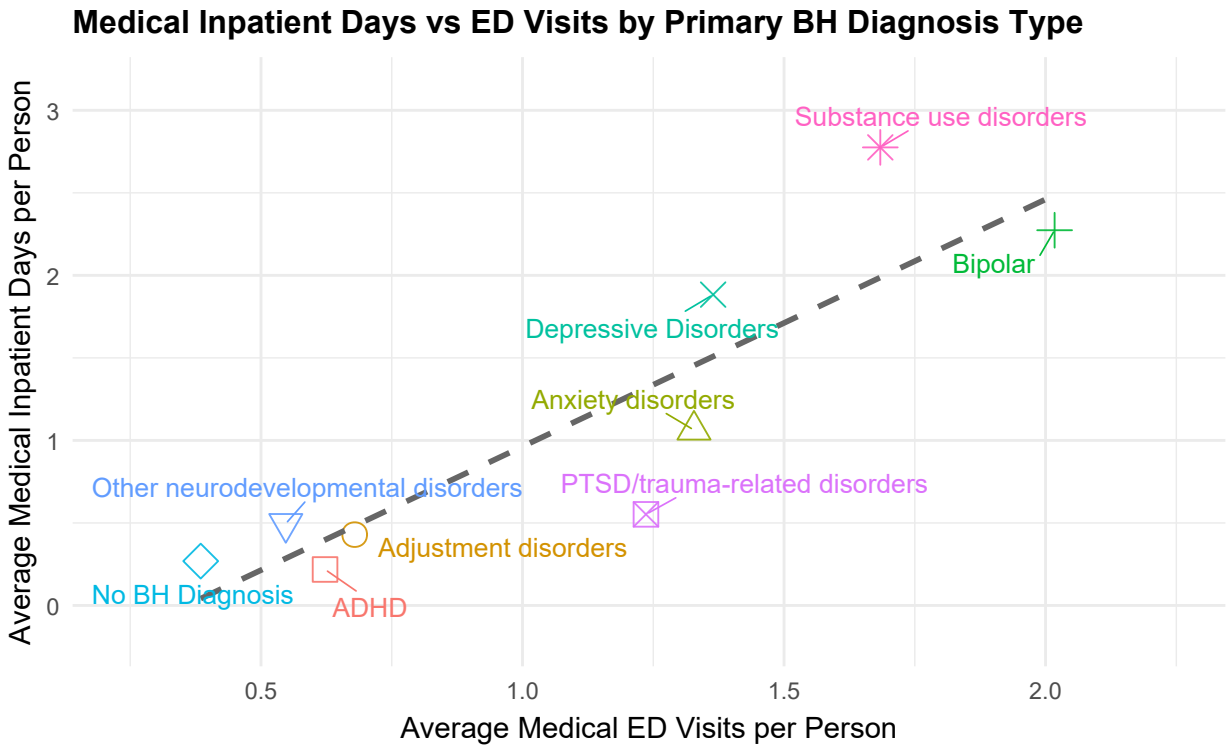

Figure 16. This figure illustrates the relationship between average medical ED visits and average inpatient days per Medicaid enrollee stratified by BH diagnosis categories.

7 Mutlimorbidity and Hospitalization Risk

7.1 Complex Multimorbidities

Individuals with multiple (>2) chronic conditions present many challenges to the health care system, including but not limited to effective coordination of care and cost containment. Individuals with complex multimorbidities have increased hospital readmissions and emergency department visits, which are commonly cited indicators of poor quality or poorly coordinated care, and important drivers of increased healthcare spending. Therefore, it is important to gather, report and analyze data on multi-morbidity and hospitalization risk for reducing recidivism rates.

In 2010, the Center for Health Care Strategies (CHCS) commissioned an analysis by researchers at Johns Hopkins University on the prevalence of co□morbidities in Medicaid beneficiaries with disabilities (Boyd, C., Leff, B., et al. (2010, December. Clarifying Multimorbidity Patterns to Improve Targeting and Delivery of Clinical Services for Medicaid Populations. Center for Health Care Strategies, Inc.). This study resulted in a list of the Top 25 Patterns of Multimorbidities ranked by per capita cost. In this context, “multi-morbidity” is a case where several conditions are present simultaneously, based on diagnostic claims data.

The index conditions examined in the current report are as follows:

- Asthma and/or Chronic Obstructive Pulmonary Disease (COPD)
- Cerebral Vascular Disease
- Chronic Ischemic Heart Disease
- Chronic Kidney Disease
- Congestive Heart Failure (CHF)
- Dementia
- Diabetes
- Hypertension
- Mental Illness

Table 25 below lists combinations of these co-morbid conditions present in the original study, along with the number of persons with those combinations in Branch County’s Medicaid population in 2024, and their relative risk of hospitalization compared to individuals without any of the multimorbidities. On average, these combinations resulted in over a 11.7x risk of inpatient hospitalization in 2024.

Table 25: Multimorbidities

Relative Risk of Hospitalization

Multimorbidities	N	Relative Risk of Hosp.
1+ Multimorbidities	21	11.65
No Multimorbidity	**16448**	**1.00**
Cerebral Vascular Disease/Stroke, CHF, Chronic Ischemic Heart Disease, Dementia, Hypertension, Mental Illness	1	0.00
Cerebral Vascular Disease/Stroke, Chronic Kidney Disease/ESRD, CHF, Chronic Ischemic Heart Disease, Dementia, Hypertension, Mental Illness	1	0.00
Chronic Kidney Disease/ESRD, CHF, Chronic Ischemic Heart Disease, Dementia, Hypertension, Mental Illness	2	5.48
Asthma/COPD, Chronic Kidney Disease/ESRD, CHF, Chronic Ischemic Heart Disease, Dementia, Hypertension, Mental Illness	2	5.48
Asthma/COPD, Chronic Kidney Disease/ESRD, CHF, Chronic Ischemic Heart Disease, Dementia, Hypertension	2	5.48
Chronic Kidney Disease/ESRD, Chronic Ischemic Heart Disease, Dementia, Hypertension, Mental Illness	6	6.09
Chronic Kidney Disease/ESRD, CHF, Chronic Ischemic Heart Disease, Dementia, Hypertension	3	10.35
Asthma/COPD, CHF, Chronic Ischemic Heart Disease, Dementia, Hypertension, Mental Illness	2	5.48
CHF, Chronic Ischemic Heart Disease, Dementia, Hypertension, Mental Illness	4	5.93
Chronic Kidney Disease/ESRD, CHF, Dementia, Hypertension	10	10.04
Asthma/COPD, CHF, Dementia, Hypertension, Mental Illness	8	16.43

As seen in Table 26, 1 enrollees have 9 or more of the multimorbidities included in this study.

Table 26: Multimorbidity Group Summary

Total Count and Percent by Region

Multimorbidity Group	SWMBH	Branch County
Total Enrollees	286822	16469
No Multimorbidity	190315 (66.4%)	11311 (68.7%)
<9 Multimorbidities	96493 (33.6%)	5157 (31.3%)
9+ Multimorbidities	14 (0%)	1 (0%)

Figure 18 displays hospital utilization rates per 1,000 enrollees in Branch County, stratified by multimorbidity status. Visit types (such as emergency department visits, inpatient stays, etc.) are shown along the x-axis, with corresponding visit rates on the y-axis.

The graph compares individuals with no multimorbidity (green bars) versus those with 1 or more multimorbidities (orange bars). Overall, enrollees with multimorbidities tend to have higher hospital utilization rates across all visit types, reflecting the increased healthcare needs associated with multiple chronic conditions.

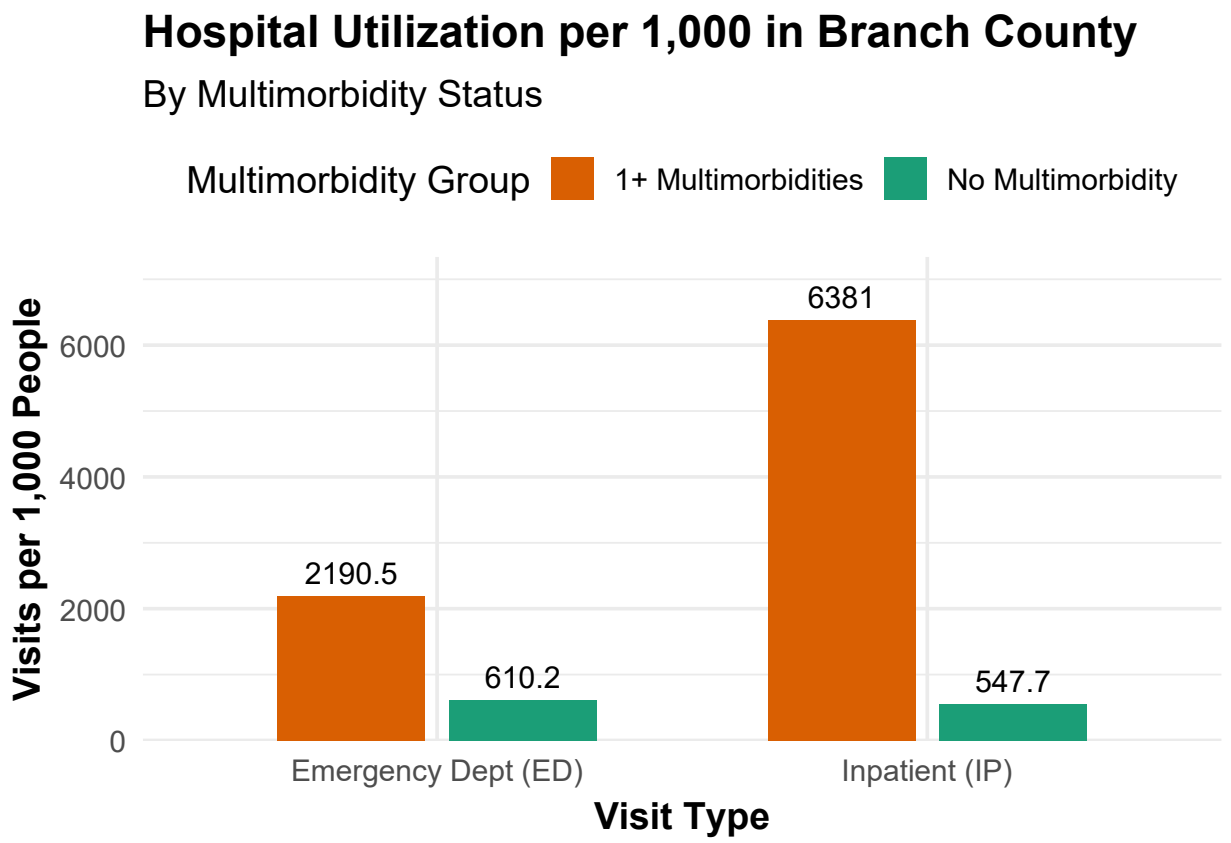

Figure 17. This figure shows the rate of hospital visits per 1,000 Medicaid enrollees stratified by multimorbidity status.

8 Healthcare Monitoring

8.1 Disease Management Metrics

Access to quality healthcare is essential for Medicaid enrollees to achieve optimal health outcomes. This section reviews key disease management metrics sourced from the Relias Population Performance data, which reflect how well enrollees in our region are receiving recommended care for common chronic conditions.

These metrics primarily measure adherence to clinical guidelines, such as completion of lab testing or prescription of medication ordered by providers and followed through by patients. Higher percentages indicate better adherence and, by extension, higher quality of care.

The tables below summarize treatment and monitoring rates for both adult and pediatric populations within the Southwest Michigan Behavioral Health (SWMBH) region overall, as well as specifically within Branch County. Note that dual-eligible individuals are excluded from this analysis because Medicare claims data were not available.

It is important to recognize that demographic and socioeconomic factors can impact access to care and an individual's ability to complete recommended treatments, which may influence these metrics.

8.1.1 Adults

Table 27 compares quality metric completion rates for adults in Branch County against the SWMBH regional average. These percentages reflect the share of enrolled adults who met specific healthcare standards within the reporting period.

Table 27: Quality Metric Completion

Adult Population – Branch vs. SWMBH

Metric	Description	SWMBH Overall	Branch
201	Presence of bronchodilator within 30 days for member diagnosed with COPD exacerbation	63.6%	57.4%
203	Presence of medication management for members diagnosed with asthma during 75 percent or more of their treatment period	47.6%	56.9%
239	Presence of Statin Medications by Members with a History of CVD	57.6%	81.6%
338	Presence of lipid profile for member diagnosed with coronary artery disease	52.0%	41.3%
363	Presence of at least two hemoglobin A1C tests within the past 12 months for member diagnosed with diabetes mellitus	41.0%	45.3%
365	Presence of metabolic testing for members diagnosed with diabetes and have been prescribed an antipsychotic	66.9%	76.2%
431	Presence of a Lipid Profile for a member diagnosed with diabetes	54.3%	62.5%
500	Presence of preventive and/or ambulatory visit within 12-months	79.7%	84.8%

8.1.2 Children

Similarly, the pediatric population's adherence to recommended care practices is shown in Table 28. This comparison highlights where Branch County stands relative to the SWMBH region overall for child enrollees.

Table 28: Quality Metric Completion

Child Population – Branch vs. SWMBH

Metric	Description	SWMBH Overall	Branch
203	Presence of medication management for members diagnosed with asthma during 75 percent or more of their treatment period	36.0%	45.5%
232	Presence of metabolic screening for members 17 years of age or younger on antipsychotics	24.1%	9.1%
365	Presence of metabolic testing for members diagnosed with diabetes and have been prescribed an antipsychotic	65.0%	100.0%

8.2 Behavioral Pharmacy Analysis

8.2.1 Adults

This section presents selected behavioral health pharmacy metrics that highlight prescribing patterns, potential clinical concerns, and associations with hospitalization risk. These metrics include medication utilization rates by class, quality indicator triggering percentages, and hospitalization outcomes.

8.2.1.1 Adult General Behavioral Pharmacy Use Data Table 29 summarizes the percentage of adult enrollees utilizing various behavioral health medication classes within the Southwest Michigan Behavioral Health (SWMBH) region overall, compared to Branch County. Medication classes include antidepressants, mood stabilizers, stimulants, benzodiazepines, antipsychotics, and opioids. These data provide insight into prescribing trends and utilization patterns.

Table 29: Adult Medication Analysis

Adult Population – Branch vs. SWMBH

Medication	SWMBH Overall	Branch
Opioids	5.0%	4.8%
Insomnia Agents	3.5%	3.9%
ADHD: Stimulants	3.0%	1.9%
Antipsychotics	6.6%	7.2%
Antidepressants	16.9%	17.2%
Antidepressants: SSRIs	10.2%	10.2%
Mood Stabilizers	3.2%	2.7%
Benzodiazepines	4.2%	3.3%
ADHD Medication	3.5%	2.5%
Antidepressants: TCA's	1.4%	1.3%

8.2.1.2 Adult SWMBH to CMT Comparator Specific Quality Indicator Triggering Percentages Quality indicator (QI) triggering rates for adult behavioral pharmacy metrics are shown next in Table 30. Population Performance algorithms identify individuals who meet population specifications but did not adhere to recommended prescribing or medication management practices.

Trigger rates indicate the percentage of individuals failing clinical recommendations. Lower percentages generally reflect better adherence, while higher percentages may suggest over-prescribing, medication side effects, refill adherence challenges, access issues, or lack of treatment engagement.

Table 30: Quality Metric Completion

Adult Population – Branch vs. SWMBH

Metric	Description	SWMBH Overall	Branch
214	Failure to Refill Antipsychotic Medication	11.4%	12.7%
217	Use of four or more psychotropic medications for 60 or more days	3.2%	4.6%
231	Use of Opioids and Benzodiazepines for 30 or More Days	35.6%	38.8%
257	Use of Two or More Second Generation Antipsychotics and a Bipolar Mood Stabilizer for 90-Days or More	5.8%	8.8%
271	Use of two or more Antipsychotic medications for 60 or more days	5.0%	6.3%
283	Multiple prescribers of the same class of psychotropic medications for 45 or more days	3.7%	4.3%
285	Use of Amphetamine medications at a higher than recommended dose for 45 or more days	2.0%	2.3%
290	Use of an antipsychotic at a higher than recommended dose for 45 or more days	1.6%	1.2%
291	Use of Benzodiazepines for 60 or More Days	0.4%	0.7%
293	Use of bipolar mood stabilizer at a lower than recommended dose for 60 or more days in the absence of any other adequately dosed bipolar mood stabilizer	5.8%	1.8%
306	Multiple prescribers of antidepressants for 45 or more days	3.3%	4.0%
310	Use of 3 of More Antidepressants for 60 or More Days	1.1%	1.5%
312	Use of 2 or more benzodiazepines for 45 or more days	0.4%	0.7%

8.2.1.3 Adult Hospitalization Rates - Behavioral and Non-Behavioral

Table 31 presents hospitalization rates stratified by behavioral pharmacy quality indicators, including total hospitalizations, behavioral health-specific hospitalizations, and non-behavioral health hospitalizations.

Rates are expressed per 100 individuals within each quality indicator group, with relative risk (RR) values compared to the reference group with no QIs triggered. These metrics provide context on the clinical impact and healthcare utilization associated with behavioral pharmacy prescribing practices.

Table 31: Adult Hospitalization Rates by Quality Indicator

Includes Total, Behavioral Health (BH), and Non-BH Hospitalizations for Adults

Metric ID	Metric Description	N	% of Pop	Total		Behavioral Health		Non-Behavioral Health	
				Hosp/100	RR	Hosp/100	RR	Hosp/100	RR
1	No QIs Triggered	5261	95.5%	6.2	1.0	0.9	1.0	5.3	1.0
2	1+ QIs Triggered	248	4.5%	35.5	5.7	9.7	10.6	25.8	4.9
214	Failure to refill antipsychotic medication within 30 days of the prescription ending	49	0.9%	24.5	4.0	16.3	17.9	8.2	1.5
217	Use of four or more psychotropic medications for 60 or more days	44	0.8%	20.5	3.3	6.8	7.5	13.6	2.6
231	Use of opioids and benzodiazepines for 30 or more days	19	0.3%	5.3	0.8	0.0	0.0	5.3	1.0
257	Use of two or more second generation antipsychotics and a bipolar mood stabilizer for 90-days or more	10	0.2%	50.0	8.1	30.0	32.9	20.0	3.8
271	Use of two or more antipsychotic medications for 60 or more days	27	0.5%	29.6	4.8	11.1	12.2	18.5	3.5
283	Multiple prescribers of the same class of psychotropic medications for 45 or more days	49	0.9%	30.6	4.9	10.2	11.2	20.4	3.9
285	Use of amphetamine medications at a higher than recommended dose for 45 or more days	2	0.0%	0.0	0.0	0.0	0.0	0.0	0.0
290	Use of an antipsychotic at a higher than recommended dose for 45 or more days	6	0.1%	16.7	2.7	0.0	0.0	16.7	3.2
291	Use of benzodiazepines for 60 or more days	1	0.0%	0.0	0.0	0.0	0.0	0.0	0.0
293	Use of bipolar mood stabilizer at a lower than recommended dose for 60 or more days in the absence of any other adequately dosed bipolar mood stabilizer	3	0.1%	33.3	5.4	33.3	36.5	0.0	0.0
306	Multiple prescribers of antidepressants for 45 or more days	34	0.6%	26.5	4.3	5.9	6.4	20.6	3.9
310	Use of 3 of more antidepressants for 60 or more days	16	0.3%	18.8	3.0	0.0	0.0	18.8	3.5
312	Use of 2 or more benzodiazepines for 45 or more days	1	0.0%	0.0	0.0	0.0	0.0	0.0	0.0
343	Failure to refill newly prescribed antidepressant within 30 days of prescription ending	82	1.5%	8.5	1.4	2.4	2.7	6.1	1.2
515	Failure to refill a mood stabilizer within 30 days of prescription ending (enrollees with bipolar or depression diagnosis)	20	0.4%	40.0	6.5	40.0	43.8	0.0	0.0

8.2.2 Children and Adolescent

This section presents selected behavioral health pharmacy metrics for children and adolescents, focusing on medication utilization and relative risk of hospitalization within this population.

8.2.2.1 Child General Behavioral Pharmacy Use Data Table 32 displays the percentage of children and adolescents (under 18 as of December 2024) utilizing various medication classes across the Southwest Michigan Behavioral Health (SWMBH) region overall and in Branch County. Medication classes include antidepressants, mood stabilizers, stimulants, benzodiazepines, antipsychotics, and opioids, among others. These data offer insights into prescribing patterns and medication use within pediatric populations.

Table 32: Child Medication Analysis

Child Population – Branch vs. SWMBH

Medication	SWMBH Overall	Branch
Opioids	0.4%	0.4%
Insomnia Agents	0.6%	0.7%
ADHD: Stimulants	5.3%	5.2%
Antipsychotics	1.6%	1.8%
Antidepressants	3.2%	3.1%
Antidepressants: SSRIs	2.6%	2.6%
Mood Stabilizers	0.6%	0.6%
Benzodiazepines	0.3%	0.3%
ADHD Medication	6.0%	5.8%
Antidepressants: TCA's	0.2%	0.1%

8.2.2.2 Child SWMBH to CMT Comparator Specific Quality Indicator Triggering Percentages Table 33 presents the top 12 most frequently triggered child and adolescent behavioral pharmacy quality indicators

for SWMBH overall and Branch County. The triggering rates indicate the proportion of the eligible population who did not meet specific clinical prescribing or medication management recommendations.

Lower triggering rates generally reflect adherence to best practices, while higher rates may highlight potential concerns such as over-prescribing, adherence challenges, or treatment barriers.

Table 33: Quality Metric Completion

Child Population – Branch vs. SWMBH

Metric	Description	SWMBH Overall	Branch
214	Failure to Refill Antipsychotic Medication	11.2%	16.2%
231	Use of Opioids and Benzodiazepines for 30 or More Days	0.0%	0.0%
257	Use of Two or More Second Generation Antipsychotics and a Bipolar Mood Stabilizer for 90-Days or More	3.3%	7.1%
283	Multiple prescribers of the same class of psychotropic medications for 45 or more days	1.7%	2.3%
285	Use of Amphetamine medications at a higher than recommended dose for 45 or more days	1.1%	1.1%
290	Use of an antipsychotic at a higher than recommended dose for 45 or more days	2.9%	0.0%
291	Use of Benzodiazepines for 60 or More Days	2.2%	12.5%
293	Use of bipolar mood stabilizer at a lower than recommended dose for 60 or more days in the absence of any other adequately dosed bipolar mood stabilizer	0.0%	0.0%
306	Multiple prescribers of antidepressants for 45 or more days	2.1%	1.9%
310	Use of 3 of More Antidepressants for 60 or More Days	0.1%	0.5%
312	Use of 2 or more benzodiazepines for 45 or more days	2.2%	12.5%

8.2.2.3 Child Hospitalization Rates - Behavioral and Non-Behavioral Hospitalization rates stratified by behavioral pharmacy quality indicators are shown below in Table 34 for children and adolescents. The table includes total hospitalizations, behavioral health (BH)-specific hospitalizations, and non-behavioral health hospitalizations.

Hospitalization rates are expressed per 100 individuals within each quality indicator group, with relative risk (RR) values compared to the reference group without triggered quality indicators. These metrics contextualize the association between behavioral pharmacy practices and hospitalization outcomes.

Table 34: Child Hospitalization Rates by Quality Indicator

Includes Total, Behavioral Health (BH), and Non-BH Hospitalizations for Children

Metric ID	Metric Description	N	% of Pop	Total		Behavioral Health		Non-Behavioral Health	
				Hosp/100	RR	Hosp/100	RR	Hosp/100	RR
1	No QIs Triggered	4966	98.7%	3.4	1.0	0.1	1.0	3.4	1.0
2	1+ QIs Triggered	66	1.3%	7.6	2.2	1.5	25.1	6.1	1.8
214	Failure to refill antipsychotic medication within 30 days of the prescription ending (last 90 days of 2024, any diagnosis)	14	0.3%	0.0	0.0	0.0	0.0	0.0	0.0
269	Failure to refill newly prescribed ADHD medication	2	0.0%	0.0	0.0	0.0	0.0	0.0	0.0
283	Multiple prescribers of the same class of psychotropic medications for 45 or more days	9	0.2%	11.1	3.2	11.1	183.9	0.0	0.0
285	Use of amphetamine medications at a higher than recommended dose for 45 or more days	3	0.1%	0.0	0.0	0.0	0.0	0.0	0.0
290	Use of an antipsychotic at a higher than recommended does for 45 or more days	0	0.0%	NaN	NaN	NaN	NaN	NaN	NaN
301	Percentage of members under the age of 18 taking antipsychotics who are diagnosed with ADHD	39	0.8%	10.3	3.0	0.0	0.0	10.3	3.0
306	Multiple prescribers of antidepressants for 45 or more days	3	0.1%	33.3	9.7	33.3	551.8	0.0	0.0
515	Failure to refill a mood stabilizer medication resulting in less than 80% days with medication coverage (persons with bipolar or depression diagnosis)	0	0.0%	NaN	NaN	NaN	NaN	NaN	NaN

8.3 Opioid

8.3.1 Adult - OPI QI Triggering Rate Comparison

Table 35 presents the top five most frequently triggered opioid pharmacy quality indicators and their triggering rates for the SWMBH region overall and Branch County, as captured in SWMBH's Relias Population Performance application. Medicaid and Medicare dually enrolled individuals are excluded from this analysis. Trigger rates represent the percentage of individuals meeting prescription criteria for each metric (e.g., opioid prescriptions filled alone or in combination with buprenorphine or benzodiazepines) who were flagged for potentially harmful prescription patterns, including combinations, strengths, or durations. Note that child opioid metric data are not available.

Table 35: Quality Metric Completion

Adult Population – Branch vs. SWMBH

Metric	Description	SWMBH Overall	Branch
213	Use of Opioid Medications for 45 Days in a 90-day Period	27.7%	23.1%
231	Use of Opioids and Benzodiazepines for 30 or More Days	35.6%	38.8%
278	Use of two or more opioid medications for 60 days	1.3%	2.9%
295	Use of buprenorphine with a benzodiazepine that has been prescribed by another physician	14.0%	25.0%
297	Use of opioids at a higher than recommended dose without a diagnosis of cancer	1.5%	0.3%

8.3.2 Adult Relative Risk of Hospitalization Related to Opioid Utilization Patterns

Table 36 displays opioid pharmacy metrics linked to hospitalization rates. Hospitalizations include total hospitalizations in the past 12 months for adults with various opioid-related quality indicator flags.

The relative risk (RR) compares hospitalization rates for each flagged group to the reference group without any triggered quality indicators. These metrics help contextualize risks associated with opioid prescribing patterns in the adult population of Branch County.

Table 36: Adult Opioid Hospitalization Metrics by Metric ID

Total Hospitalizations in Past 12 Months for Adults - Opioid

Metric	Description	Enrollees	% of Total	Hosp. per 100	Risk Ratio (vs 0)
1	No QIs Triggered	5261	95.5%	6.2	1.0
2	1+ QIs Triggered	248	4.5%	35.5	5.7
213	Use of opioid medications for 45 or more days in absence of a diagnosis supporting chronic use	73	1.3%	23.3	3.8
231	Use of opioids and benzodiazepines for 30 or More Days	19	0.3%	5.3	0.8
278	Use of two or more opioid medications for 60 days.	6	0.1%	33.3	5.4
295	Use of buprenorphine with a benzodiazepine that has been prescribed by another physician	1	0.0%	0.0	0.0
297	Use of opioids at a higher than recommended dose without a diagnosis of cancer	1	0.0%	0.0	0.0