CHAPTER 4

Behavioral Health in the Medicaid Program—People, Use, and Expenditures

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Key Points

- Medicaid is the single largest payer in the United States for behavioral health services, including mental health and substance use services. Medicaid accounted for 26 percent of behavioral health spending in 2009.
- Medicaid enrollees with behavioral health diagnoses have varied physical and behavioral health needs. They range from young children who need screening, referral, and treatment for attention deficit hyperactivity disorder or depression to chronically homeless adults with serious mental illness.
- In 2011, one in five Medicaid beneficiaries had behavioral health diagnoses but accounted for almost half of total Medicaid expenditures, with more than $131 billion spent on their care (including physical, behavioral, and other Medicaid-covered services).
- Approximately 3 million, or 11 percent, of children who qualified for Medicaid on a basis other than disability or child welfare assistance had behavioral health diagnoses in 2011; even so, they accounted for one-quarter of Medicaid expenditures for children. Most of these children qualified on the basis of low family income.
- Fewer than half (44 percent) of the children who received child welfare assistance had behavioral health diagnoses, but they accounted for more than three-quarters (78 percent) of expenditures in this eligibility group.
- About half of non-dually eligible enrollees under age 65 (including children) who qualified for Medicaid on the basis of disability had a behavioral health diagnosis in 2011. Total Medicaid expenditures for this group accounted for two-thirds of total Medicaid spending.
  - Severely mentally ill beneficiaries enrolled on the basis of disability incurred the highest cost per person, but comprised a relatively small share of total enrollees.
  - Although just 21 percent of non-dually eligible adults eligible for Medicaid on a basis other than disability had a behavioral health diagnosis, they accounted for 38 percent of expenditures in that group.
- Medicaid beneficiaries enrolled on a basis other than disability still have unmet needs for behavioral health screening, treatment, and referrals. Early intervention and treatment could help delay or prevent loss of function and allow beneficiaries to manage problems before they become disabling.

CHAPTER 4: Behavioral Health in the Medicaid Program—People, Use, and Expenditures

Medicaid is the single largest payer in the United States for behavioral health services, which include services for mental health and substance use disorders, accounting for 26 percent of such expenditures in 2009 (SAMHSA 2013a). According to the latest Medicaid administrative data available, in 2011 about one-fifth of Medicaid enrollees had a behavioral health diagnosis. Services used by these enrollees—not only services related to their behavioral health condition, but all of their service use—accounted for almost half of all Medicaid spending (Table 4-1).

MACPAC has previously discussed the unique role that Medicaid serves in providing treatment to poor and low-income people with disabilities (MACPAC 2014b, 2013). We are now beginning to focus on the large number of Medicaid enrollees in need of and receiving behavioral health services. This population is diverse and includes both young and old with different physical and behavioral health treatment needs. They range from young children in need of appropriate screening and referral for treatment of attention deficit hyperactivity disorder and depression to chronically homeless adults with serious mental illness. Those with less severe illness may require medication or therapy and have minimal problems with everyday activities, while those with severe illness may require long-term services and supports in the community or in institutions in order to function. People with behavioral health conditions also vary considerably in their comorbid medical conditions and treatment needs. Some can be treated capably by primary care physicians, while others may require specialized care.

Essential to MACPAC's examination of Medicaid's role in the financing and delivery of behavioral health services is a description of the people in need of such care. Therefore, we examined the following:

- the prevalence of behavioral health conditions (identified through survey data and approximated by examining utilization data of people with behavioral health diagnoses);
- enrollee use of health services; and
- expenditures for these services.

Because of the diversity of the affected populations, we looked at children, adults under age 65, and adults age 65 and older separately. We also looked closely at service use among certain groups more likely to need behavioral health care: those eligible based on a disability or child welfare status and those who are dually eligible for Medicare and Medicaid.

This chapter is intended as a starting point for future Commission work to examine how Medicaid pays for and delivers behavioral health services. These descriptive analyses are the first step in what we expect to be an extended inquiry into identifying targeted policies and practices for improving care for subpopulations of Medicaid enrollees with different needs while controlling spending and ensuring that the program operates effectively and efficiently.

Medicaid Enrollees with Behavioral Health Conditions

The population with behavioral health disorders is diverse with respect to both type of disorder and type of medical treatment needed. We use available data to describe the Medicaid population in need of behavioral health treatment

in terms of the prevalence of specific diagnoses, comorbid medical conditions, and total Medicaid expenditures. When possible, Medicaid populations are compared to privately insured and uninsured populations.

Data and methods

The analysis presented here draws from several data sources. Data on prevalence of behavioral health conditions come from two federally funded surveys representative of the civilian non-institutionalized population: the National Survey on Drug Use and Health and the National Survey of Children's Health. These surveys are described in Appendix 4A. These data demonstrate the disproportionate share of Medicaid beneficiaries with behavioral health conditions relative to those covered by private insurance and those who are uninsured.

Data on use of services and expenditures for Medicaid enrollees with diagnoses of behavioral health conditions come from the Medicaid Statistical Information System (MSIS). Data are for calendar year 2011, which, when we began this analysis, was the latest available year with reasonably complete data for all states. We identified enrollees with behavioral health diagnoses as those with any fee-for-service claim or managed care encounter record that listed a mental health or substance use disorder diagnosis (except for prescribed medicines).[1] Claims examined were not only for behavioral health services, but for other services as well. We identified behavioral health diagnoses using codes from the *International Classification of Diseases, Ninth Revision, Clinical Modification* (ICD-9-CM),[2] categorized according to Chronic Illness and Disability Payment System (CDPS) payment code methodology (Kronick et al. 2000).[3] See Appendix Table 4A-2 for a list of groupings of ICD-9-CM codes used in tables and figures presented in this chapter.

Our analysis may underestimate the true prevalence of behavioral health conditions among Medicaid enrollees, as well as their aggregate Medicaid spending, for several reasons. First, our analysis uses Medicaid claims data to identify individuals with behavioral health conditions; therefore, enrollees who did not have any Medicaid service use with the specified diagnoses are not included in use or expenditures estimates presented here. It is possible for an individual to have a behavioral health condition that is not recorded on a claim or encounter. This could be due to the stigma of reporting behavioral health diagnosis codes, or lack of space on the claim or encounter form if the enrollee has multiple conditions associated with the visit.

Second, we excluded from the analysis enrollees in the District of Columbia and 10 states (Illinois, Maryland, Massachusetts, Mississippi, Nevada, Pennsylvania, Ohio, South Carolina, Utah, and West Virginia), due to questionable encounter data. Third, we excluded enrollees with partial benefits, for example, enrollees covered only for family planning services.

Fourth, our analysis underestimates the number of—and aggregate amount of Medicaid spending for—beneficiaries dually enrolled in Medicaid and Medicare with behavioral health conditions because we used only Medicaid data on behavioral health conditions to identify them. To the extent that such diagnoses can be identified only in association with dually enrolled beneficiaries' use of Medicare funded services, our analysis will miss these individuals. Fifth, and finally, another reason these estimates may be understated is that behavioral health conditions are harder to diagnosis and measure in adults age 65 and older (Byers et al. 2012, Bartels et al. 2004). We discuss this later in the chapter.

Dually eligible enrollees account for a large share of Medicaid beneficiaries enrolled on the basis of disability, and given their high total Medicaid expenditures, we have included them in our analysis of total expenditures in Table 4-1, because this table is meant to capture all identifiable Medicaid spending for all Medicaid enrollees.

However, we excluded dually eligible enrollees from our more focused analysis of expenditures, specific behavioral health diagnoses, and comorbid conditions of the specific population of adults under age 65 eligible for Medicaid on the basis of disability.

We discuss individuals dually enrolled in Medicaid and Medicare in the last section of the chapter, which focuses on dually eligible adults age 21 and over. The data presented in the last section, and the discussion of dually eligible enrollees' behavioral health diagnoses, comorbid conditions, and spending, are based on data from linked Medicare and Medicaid datasets and published literature.

The total aggregate and per enrollee expenditure numbers presented here include both full-year Medicaid enrollees, as well as beneficiaries covered for only part of a year. Because about one-quarter of enrollees with a behavioral health diagnosis were covered for only part of the year (as shown in Appendix Table 4A-1) and because spending for this population accounts for about 16 percent of total Medicaid spending for enrollees with behavioral health diagnoses, eliminating part-year enrollees from expenditure totals would not present an accurate picture of aggregate Medicaid spending for individuals with behavioral health conditions. Such enrollees may, for example, become eligible for Medicaid due to an unplanned hospitalization for symptoms of severe mental illness, and this can be associated with considerable expenditures immediately upon entering the program.

Comparisons of expenditures for full-year and part-year children and adults eligible on a basis other than disability are shown in Appendix Table 4A-1. Although part-year enrollees have lower overall total per capita expenditures, such expenditures are still substantially higher among children eligible on the basis of disability and children eligible on the basis of child welfare assistance than they are for other children. For all groups, both full- and part-year enrollees with behavioral health diagnoses had higher per capita expenditures than those without. Therefore, the per enrollee Medicaid numbers shown in this chapter for enrollees in specific age and eligibility groups generally reflect Medicaid spending covering an average of less than 12 months.

Overall Medicaid expenditures by age and eligibility group

Almost 9 million Medicaid enrollees under age 65 had a diagnosis of a behavioral health condition on either a Medicaid fee-for-service claim or encounter record in 2011 (Table 4-1). Most affected are children and non-dually eligible adults qualifying on the basis of disability, about half of whom had a mental health diagnosis. Prevalence is next highest among children eligible for Medicaid on the basis of child welfare assistance. (As described in greater detail in Chapter 3, this group includes foster children receiving child welfare services under Title IV-E of the Social Security Act as well as those receiving special-needs adoption assistance.) But 1 in 5 adults eligible on a basis other than disability (2.3 million) and 1 in 10 children eligible on a basis other than disability or child welfare assistance (about 3 million) also had a behavioral health diagnosis.

Among all non-dually eligible enrollees, 4 percent were diagnosed with a substance use disorder—the diagnosis with the least prevalence among all enrollee categories (Figure 4-1). Among enrollees not dually eligible for Medicare and Medicaid, adults eligible on the basis of disability had the highest prevalence of substance use disorder, 19 percent, compared to 10 percent of adults eligible on a basis other than disability.

With respect to expenditures, total Medicaid spending in 2011 for all enrollees with a behavioral health diagnosis came to more than $131 billion, almost half of total Medicaid expenditures (Table 4-1). This figure includes expenses for all Medicaid covered services for these enrollees, and is not

TABLE 4-1. Utilization and Spending by Medicaid Enrollees with Behavioral Health Diagnoses by Age and Basis of Eligibility, 2011

Age group and basis of eligibility	Number of enrollees with a behavioral health diagnosis (millions)[1]	Total Medicaid spending for enrollees with a behavioral health diagnosis (billions)[1]	Enrollees with a behavioral health diagnosis as percent of all enrollees	Spending for enrollees with a behavioral health diagnosis as percent of spending for all enrollees	Total Medicaid spending per enrollee (medical, behavioral health, and long-term services and supports)[2]	
					Enrollees with a behavioral health diagnosis	Enrollees with no behavioral health diagnosis
All enrollees[1, 3]	**9.86**	**$131.18**	**20%**	**48%**	**$13,303**	**$3,564**
Children (under age 21)[2]	**4.10**	**30.70**	**14**	**38**	**7,479**	**2,004**
Basis of eligibility						
Based on disability	.69	13.32	50	62	19,182	11,399
Based on child welfare assistance	.32	3.51	44	78	11,097	2,499
Basis other than disability or child welfare assistance	3.09	13.87	11	25	4,482	1,720
Age group						
0–6 years	1.09	7.90	9	23	7,270	2,236
7–14 years	1.88	12.53	18	48	6,669	1,575
15–20 years	1.14	10.27	19	49	9,013	2,205
Adults not dually eligible for Medicare and Medicaid (age 21–64)	**3.75**	**52.68**	**27**	**53**	**14,066**	**4,602**
Basis of eligibility						
Based on disability	1.53	37.32	47	63	24,466	12,702
Basis other than disability	2.22	15.36	21	38	6,919	2,939
Age group						
21–44 years	2.39	26.27	25	48	11,007	3,848
45–64 years	1.36	26.41	33	59	19,437	6,595

Notes: Enrollees with a behavioral health diagnosis are defined as persons who had any Medicaid fee-for-service claim or managed care encounter record where a behavioral health diagnosis was recorded (except for prescribed medicines); these claims and encounter records might have been for specific behavioral health services or for physical health or other services. Behavioral health diagnoses cover *International Classification of Diseases, Ninth Revision, Clinical Modification* (ICD-9-CM) codes categorized by the Chronic Illness and Disability Payment System (CDPS) payment code methodology. Amounts shown in the table are a minimum estimate of the true number of Medicaid enrollees with behavioral health conditions and their aggregate Medicaid spending (see Data and methods section of this chapter, for discussion).

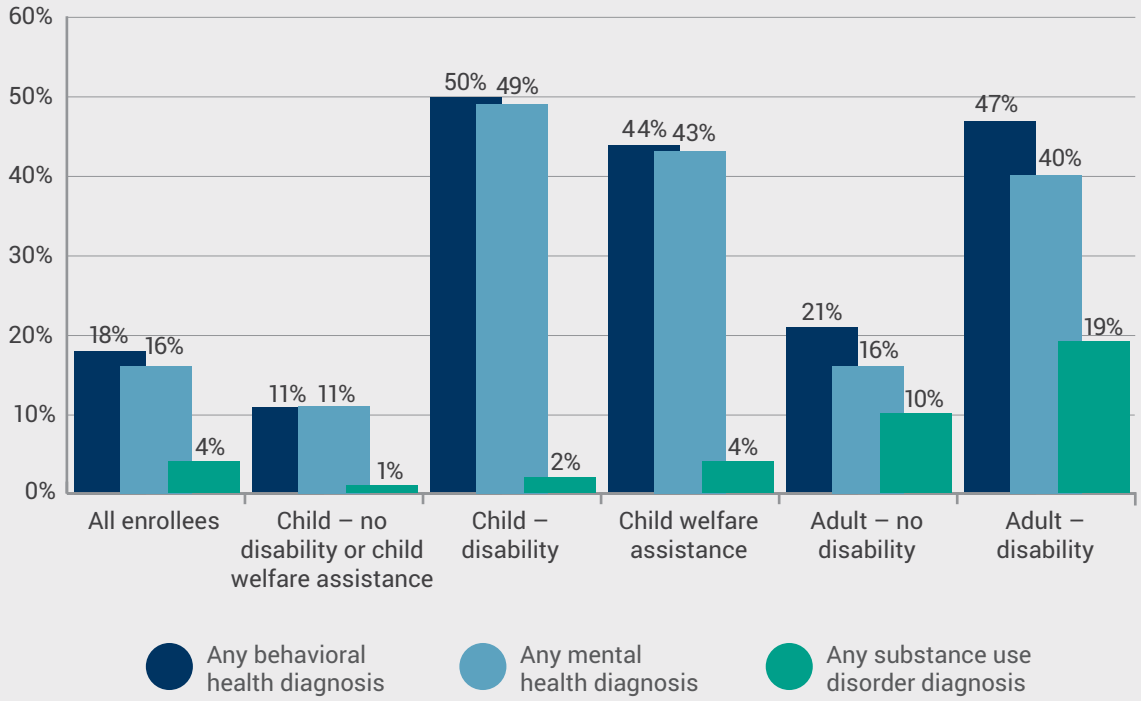
[1] Total includes individuals under age 65 dually enrolled in Medicaid and Medicare who qualify on the basis of disability as well as non-dually eligible enrollees age 65 or older, but these groups are not displayed separately in this table because (1) for dually enrolled individuals, the number of enrollees with behavioral health diagnoses is substantially underestimated if only Medicaid data are used; and (2) for non-dually eligible enrollees age 65 or older, the population reflects a relatively small number of individuals. The total also includes part-year enrollees (see Appendix Table 4A-1 for full-year and part-year enrollee breakouts).

[2] Includes about 7,500 dually eligible children.

[3] Partial-benefit enrollees and states with incomplete or low-quality managed care encounter data (Illinois, Maryland, Massachusetts, Mississippi, Nevada, Pennsylvania, Ohio, South Carolina, Utah, West Virginia, and the District of Columbia) have been excluded from the analysis.

Source: MACPAC analysis of 2011 Medicaid Statistical Information System (MSIS) data.

FIGURE 4-1. Percentage of Non-Dually Eligible Medicaid Enrollees under Age 65 with a Behavioral Health Diagnosis by Basis of Eligibility, 2011



Notes: Enrollees with a behavioral health diagnosis are defined as persons who had any Medicaid fee-for-service claim or managed care encounter record where a behavioral health diagnosis was recorded (except for prescribed medicines); these claims and encounter records might have been for specific behavioral health services or for physical health or other services. Behavioral health diagnoses cover *International Classification of Diseases, Ninth Revision, Clinical Modification* (ICD-9-CM) codes categorized by the Chronic Illness and Disability Payment System (CDPS) payment code methodology. Partial-benefit enrollees and states with incomplete or low-quality managed care encounter data (Illinois, Maryland, Massachusetts, Mississippi, Nevada, Pennsylvania, Ohio, South Carolina, Utah, West Virginia, and the District of Columbia) have been excluded from the analysis.

Individuals dually eligible for Medicare and Medicaid are excluded from this figure for all population groups.

Source: MACPAC analysis of 2011 Medicaid Statistical Information System (MSIS) data.

limited to expenditures associated only with treatment of their behavioral health conditions. It also includes expenditures for enrollees dually eligible for Medicare and Medicaid and both part-year and full-year enrollees. To the extent that individuals newly eligible as a result of expanded eligibility for adults under the Patient Protection and Affordable Care Act (ACA, P.L. 111-148, as amended) have behavioral health conditions, this number will increase when more recent administrative data are available.

For every age and eligibility group, enrollees with a behavioral health diagnosis had higher total expenditures per person than enrollees with no behavioral health diagnosis (Table 4-1). When looking at all enrollees, total spending per enrollee with a behavioral health diagnosis was nearly four times higher than those without. Non-dually eligible

adults enrolled on the basis of disability and children eligible on the basis of disability had the highest per capita expenditures, followed by children eligible on the basis of child welfare assistance, with children and adults eligible on a basis other than disability and children eligible on basis other than disability and not receiving welfare assistance having the lowest per person expenditures.

Although we could have restricted our analysis to expenditures associated with the diagnosis and treatment of behavioral conditions only, we chose to look at total expenditures for two reasons. First, behavioral health and medical conditions interact with each other, so it is not always possible to determine whether a particular service is designed to treat a behavioral health condition or a medical comorbidity—for example, medical conditions caused by non-compliance with behavioral health treatment or vice versa. Second, people with behavioral health conditions also have high rates of comorbid conditions (as will be discussed later), raising the cost of their care to the Medicaid program overall. Future analyses may focus on specific behavioral health services.

The remainder of this chapter takes a more detailed look at separate groups of Medicaid enrollees characterized by age and basis of Medicaid eligibility. For each group, we consider the prevalence of behavioral health conditions, Medicaid service use, and expenditures. By focusing on specific age and eligibility groups, we can better understand where to target initiatives that improve care and contain expenditures.

Children and Youth

In 2011, more than 4 million of the 29 million children and youth under age 21 who were enrolled in the Medicaid program had a diagnosis of a behavioral health condition (Table 4-1). Most of these children (about 3 million) qualified for Medicaid due to their low family incomes, and the others qualified on the basis of disability or child welfare assistance.

Prevalence of behavioral health conditions in children and youth

Obtaining an accurate behavioral health diagnosis for children, particularly young children, can be challenging. They differ from adults in that they experience many physical, mental, and emotional changes as they grow and develop (NAMI 2015, NIMH 2009). Symptoms may be difficult to understand and interpret in the context of these rapid changes in their brains and bodies. Behaviors may change dramatically or develop over time. Moreover, children may be unable to effectively describe their feelings or thoughts in a manner that would assist a clinician in making a diagnosis.

A comprehensive analysis of data from different national systems concluded that the percentage of children reported to be experiencing behavioral health conditions varies by condition, survey, and age (Perou et al. 2013). In general, however, looking across different surveillance systems, attention deficit disorder or attention-deficit hyperactivity disorder (ADD/ADHD, also known as hyperkinetic syndrome of childhood) was most prevalent, followed by depression, behavioral or conduct problems, anxiety, substance use disorders, autism spectrum disorders, and Tourette syndrome. Because these conditions often occur together, the estimates for each cannot be combined for an overall estimate of the prevalence of mental disorders among children (Perou et al. 2013).

The prevalence of all conditions and indicators increased with age, with the exception of autism spectrum disorder, which was highest in children age 6–11. Boys were more likely than girls to have most of the disorders, including ADHD, behavioral or conduct problems, autism spectrum disorders, anxiety, Tourette syndrome, and cigarette dependence, and boys were more likely than girls to die by suicide. Girls were more likely to have an

TABLE 4-2. Overall Health Status and Prevalence of Health Conditions among Children under Age 18 by Insurance Status, 2011–2012

Health status and health conditions	Percentage of children affected in each coverage category			
	All children	Medicaid or CHIP	Private insurance	Uninsured
All Persons	100%	100%	100%	100%
Health status				
Excellent/very good	84.2*	74.9	91.4*	73.9*
Good	12.7*	19.3	7.5*	20.1*
Fair/poor	3.2*	5.9	1.1*	6.0
Condition[1]				
ADD or ADHD	7.0*	9.0	6.1*	3.8*
Current learning disability	6.7*	9.8	5.0*	4.5*
Current speech or language problem	4.3*	6.0	3.3*	2.9*
Current anxiety disorder	3.0*	3.6	2.7*	2.1*
Current developmental delay	3.2*	4.8	2.3*	1.6*
Current conduct disorder	2.8*	5.2	1.4*	2.0*
Current depression	1.9*	3.1	1.2*	2.0
Autism spectrum disorder	1.6*	1.9	1.5*	0.5*
Current mental disability or mental retardation	0.9*	1.6	0.6*	0.3*
Current epilepsy or seizure disorder	0.7*	1.1	0.4*	0.1*
Current brain injury or concussion	0.3	0.4	0.2	0.2
Current Tourette syndrome	0.1	0.2	0.1	0.1

Notes: ADD is attention deficit disorder. ADHD is attention deficit hyperactivity disorder.

[1] Parent or guardian respondents are asked about the children's conditions as of the date of the interview for children age 2–17, with the exception of current learning disability which is asked about for children age 3–17, and current epilepsy or seizure disorder, which is asked for children age 0–17.

* Difference from Medicaid or CHIP is statistically significant at the 0.05 level.

Source: MACPAC analysis of the National Survey of Children's Health, 2011–2012.

alcohol use disorder, and adolescent girls were more likely to have depression (Perou et al. 2013). This analysis also showed that all subgroups of the racial and ethnic, age, and income categories were affected by mental disorders in childhood, although the prevalence estimates varied by population.

Data from the National Survey of Children's Health showed that children covered by Medicaid or the State Children's Health Insurance Program (CHIP) had worse overall reported health status and were more likely to report having ADHD, current conduct disorder, current mental disability or intellectual disability, current learning disability, or current speech or language problem than either privately insured or uninsured children (Table 4-2).[4] For some children, these findings are intuitive. Children qualifying for Medicaid on the basis of disability would be expected to have a higher prevalence of behavioral health conditions than privately insured children, to the extent that behavioral health conditions cause functional limitations that lead to Medicaid eligibility. Similarly, children who qualified for Medicaid on the basis of foster care or other child welfare assistance also had a high prevalence of behavioral health conditions as a result of

exposure to abuse and neglect and being removed from their homes (AAP 2005; also see Chapter 3 of this report).

Use of behavioral health services by all children and youth with behavioral health conditions

Children diagnosed with behavioral conditions benefit from treatment that may involve a combination of medications, therapies, and inpatient and outpatient visits. In addition, multiple expert panels and advocates have stressed the importance of prevention and health promotion, early intervention, and treatment for behavioral health conditions to help manage problems before they become disabling (NIHCM 2009). In fact, Medicaid requires that enrollees under age 21 receive all mandatory or optional but medically necessary services, including mental health services, under the Early and Periodic Screening, Diagnostic, and Treatment (EPSDT) benefit.

Medicaid pays a large share of treatment costs for behavioral health conditions for children overall. To put these Medicaid expenditures in context, data from the Medical Expenditure Panel Survey estimate that total expenditures for care and treatment of mental disorders (as opposed to total expenditures as presented in Table 4-1) of all non-institutionalized children in 2011 was $13.8 billion. As well, in a comparison of expenditures according to illness or condition treated, mean expenditures per child for treatment of mental disorders ($2,465 per child) were higher than expenditures for treatment of any of the other conditions examined (Soni 2014). For children age 5–17, on average, 44.0 percent of mental health expenditures were for prescription medicines ($4.8 billion) and 34.9 percent were for ambulatory visits ($3.8 billion). Nearly half (46.8 percent) of average annual total expenditures for the treatment of mental health disorders for school-age children in 2009–2011 was paid by Medicaid, while 31.9 percent was paid by private insurance, and 13.6 percent was paid out of pocket by families or other individuals (Davis 2014).

The category of mental and behavioral disorders made up the second highest share of hospital admissions and the highest readmission rate. Data from the Healthcare Cost and Utilization Project show a high rate of readmissions for mental and behavioral disorders among adolescents. For youth age 13–20, one readmission in three was for a mental and behavioral disorder. Younger children also had high rates of admission and readmission for mental and behavioral disorders (Trudnak et al. 2014).

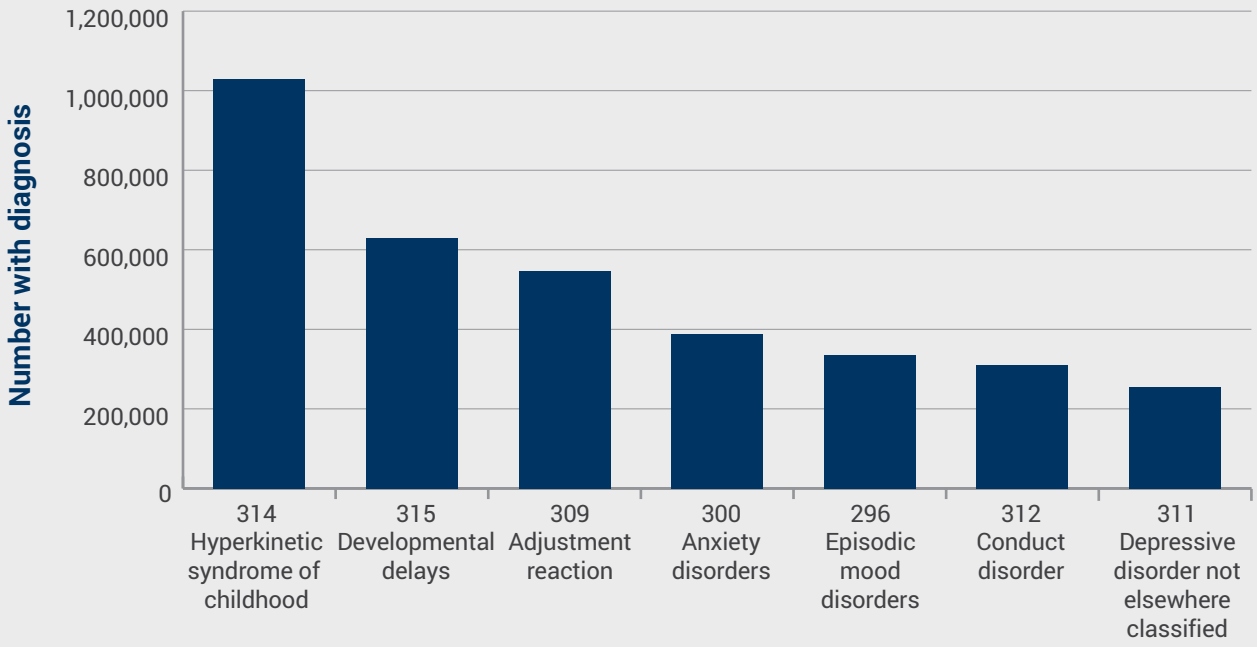
Children qualifying for Medicaid on a basis other than disability or child welfare assistance

Most children under age 21 who were eligible for Medicaid on a basis other than disability or child welfare assistance qualified on the basis of low family income. Of these, 11 percent had a behavioral health diagnosis, representing about 3 million children (Table 4-1).

The most common behavioral health diagnoses for this group were hyperkinetic syndrome of childhood (ADD/ADHD, about 1 million children), developmental delays, and adjustment reaction disorders (Figure 4-2). Significant numbers also had diagnoses for episodic mood disorders, including major depression (more than 300,000 children), and the category of anxiety, dissociative, and somatoform disorders (about 400,000 children).

All told, children with behavioral health diagnoses who qualified for Medicaid on a basis other than disability or child welfare assistance (e.g., based on low family incomes) accounted for one-quarter of all spending for all children in this category, incurring an average annual expenditure per child of $4,500 (Table 4-1). This was more than 2.5 times the average expenditure for a child with the same eligibility basis who has no behavioral health diagnosis ($1,700). The distribution of expenditures

FIGURE 4-2. Most Common Behavioral Health Diagnoses of Children Eligible for Medicaid on a Basis Other than Disability or Child Welfare Assistance, 2011



Notes: Enrollees with a behavioral health diagnosis are defined as persons who had any Medicaid fee-for-service claim or managed care encounter record where a behavioral health diagnosis was recorded (except for prescribed medicines); these claims and encounter records might have been for specific behavioral health services or for physical health or other services. Behavioral health diagnoses cover *International Classification of Diseases, Ninth Revision, Clinical Modification* (ICD-9-CM) codes categorized by the Chronic Illness and Disability Payment System (CDPS) payment code methodology. Partial-benefit enrollees and states with incomplete or low-quality managed care encounter data (Illinois, Maryland, Massachusetts, Mississippi, Nevada, Pennsylvania, Ohio, South Carolina, Utah, West Virginia, and the District of Columbia) have been excluded from the analysis.

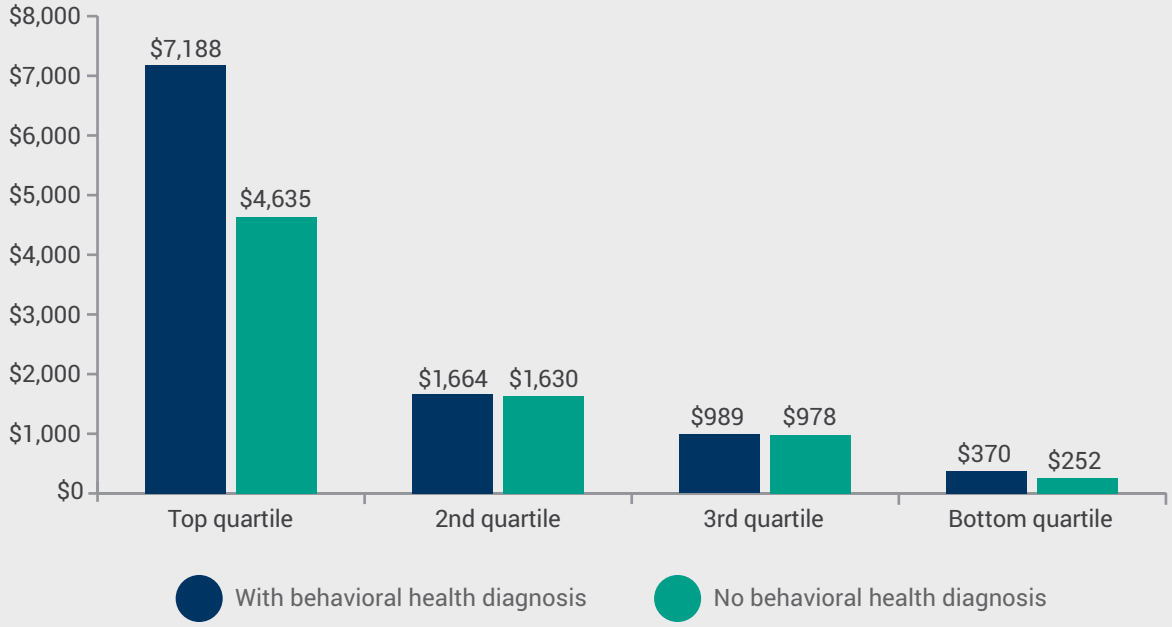
Source: MACPAC analysis of 2011 Medicaid Statistical Information System (MSIS) data.

for this group ranged from less than $400 among children in the lowest quartile of total Medicaid expenditures to about $7,000 for children in the top quartile (Figure 4-3).

Children qualifying for Medicaid on the basis of child welfare assistance

Children qualifying for Medicaid on the basis of child welfare assistance—including foster children, children under legal guardianship, children receiving adoption assistance, children served at home, and youth who have aged out of care—have significant health care needs, including physical, dental, and especially behavioral health care needs. (See Chapter 3 for more information about this population.) About 55 percent have two or more chronic conditions. The most common physical health issues in this population include skin conditions, asthma, anemia, malnutrition, and manifestations of abuse (Allen and Hendricks 2013; AAP 2005). In addition, health care received prior to welfare agency involvement is often inadequate, with many children entering foster care with multiple unmet health care needs, often exceeding even those of other low-income children. These

FIGURE 4-3. Total Medicaid Spending Per Enrolled Child Eligible for Medicaid on a Basis Other than Disability or Child Welfare Assistance, with and without a Behavioral Health Diagnosis, 2011



Notes: Enrollees with a behavioral health diagnosis are defined as persons who had any Medicaid fee-for-service claim or managed care encounter record where a behavioral health diagnosis was recorded (except for prescribed medicines); these claims and encounter records might have been for specific behavioral health services or for physical health or other services. Behavioral health diagnoses cover *International Classification of Diseases, Ninth Revision, Clinical Modification* (ICD-9-CM) codes categorized by the Chronic Illness and Disability Payment System (CDPS) payment code methodology. Partial-benefit enrollees and states with incomplete or low-quality managed care encounter data (Illinois, Maryland, Massachusetts, Mississippi, Nevada, Pennsylvania, Ohio, South Carolina, Utah, West Virginia, and the District of Columbia) have been excluded from the analysis.

Dually eligible Medicare and Medicaid-enrolled children (n = approximately 2,000) are excluded from the denominator when calculating spending per child.

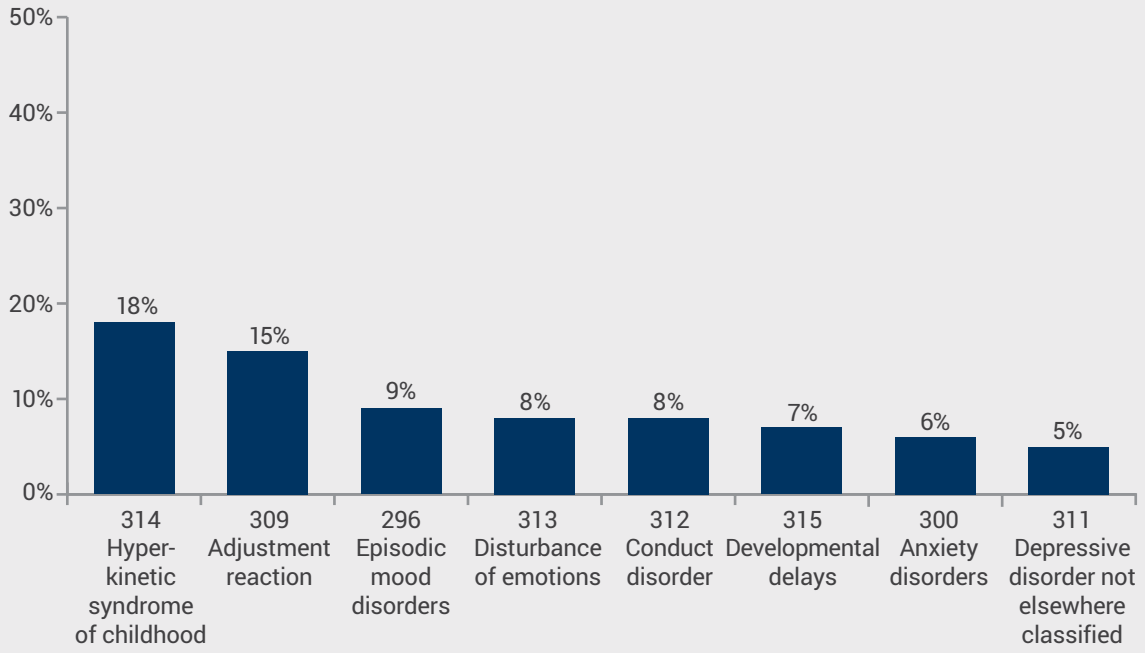
Source: MACPAC analysis of 2011 Medicaid Statistical Information System (MSIS) data.

problems are likely exacerbated by exposure to frequent relocations (from home to foster home placements or legal guardianships), ongoing issues of separation and loss, and the complexities of the welfare system (AAP 2005).

Over 40 percent of more than 700,000 children under age 21 who qualified for Medicaid based on child welfare assistance had a behavioral health diagnosis, accounting for about three-quarters of total Medicaid spending among these children (Table 4-1). The most common diagnoses were hyperkinetic syndrome of childhood (ADD/ADHD) and adjustment reaction disorder (Figure 4-4). In addition, more than 5 percent of these children and youth had disturbances of emotions specific to childhood and adolescence, conduct disorders, anxiety disorders, depressive disorders, or episodic mood disorders.

Average total expenditures for children eligible for Medicaid on the basis of child welfare assistance,

FIGURE 4-4. Most Common Behavioral Health Diagnoses of Children Eligible for Medicaid on the Basis of Child Welfare Assistance, 2011



Notes: Enrollees with a behavioral health diagnosis are defined as persons who had any Medicaid fee-for-service claim or managed care encounter record where a behavioral health diagnosis was recorded (except for prescribed medicines); these claims and encounter records might have been for specific behavioral health services or for physical health or other services. Behavioral health diagnoses cover *International Classification of Diseases, Ninth Revision, Clinical Modification* (ICD-9-CM) codes categorized by the Chronic Illness and Disability Payment System (CDPS) payment code methodology. Partial-benefit enrollees and states with incomplete or low-quality managed care encounter data (Illinois, Maryland, Massachusetts, Mississippi, Nevada, Pennsylvania, Ohio, South Carolina, Utah, West Virginia, and the District of Columbia) have been excluded from the analysis.

Source: MACPAC analysis of 2011 Medicaid Statistical Information System (MSIS) data.

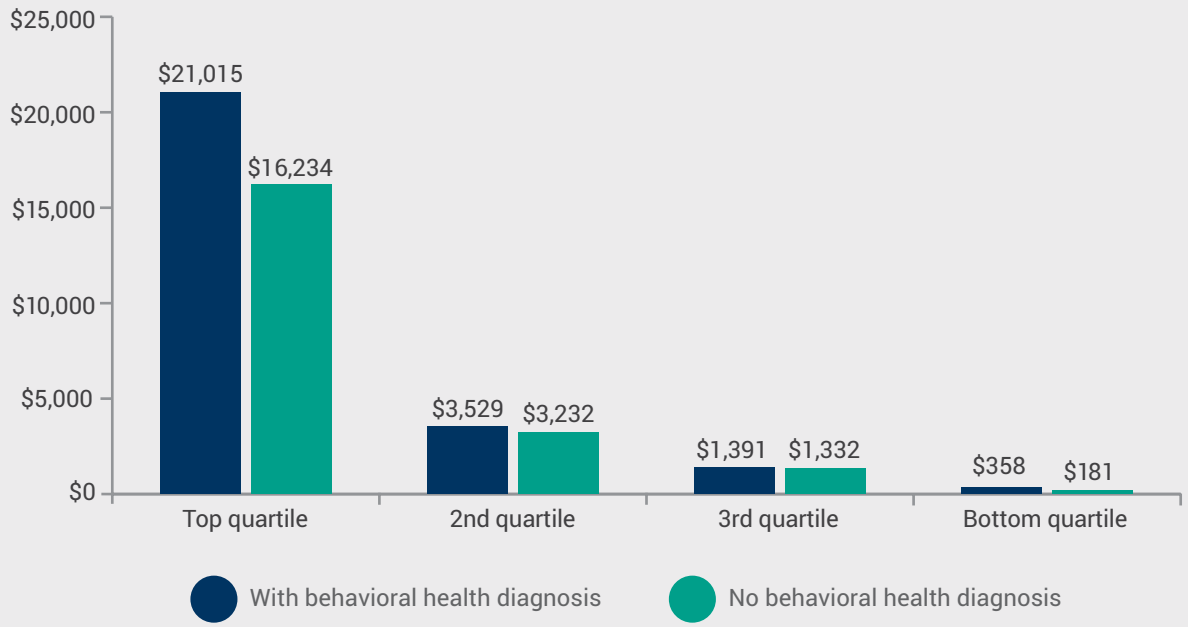
both for those with and those without a behavioral health diagnosis, were much higher than for children eligible on a basis other than disability or child welfare assistance (Figures 4-3 and 4-5). In the most expensive quartile of total Medicaid expenditures, the average per capita expenditure for children with behavioral health diagnoses who qualified on the basis of child welfare assistance came to $21,000 on average, compared to about $7,000 for children eligible on a basis other than disability or child welfare.

There was a spending differential of about $5,000 between children with and without a behavioral health diagnosis in the top expenditure quartile (Figure 4-5). Among children in the middle two quartiles of the expenditure distribution, spending was similar between children with and without behavioral health diagnoses.

Children qualifying on the basis of disability

About 5 percent of Medicaid-enrolled children under age 21, or 1.4 million children, qualified on the basis of disability in 2011 (MACPAC 2015). Almost half of these children had a behavioral

FIGURE 4-5. Total Medicaid Spending Per Enrolled Child Eligible for Medicaid on the Basis of Child Welfare Assistance, with and without a Behavioral Health Diagnosis, 2011



Notes: Enrollees with a behavioral health diagnosis are defined as persons who had any Medicaid fee-for-service claim or managed care encounter record where a behavioral health diagnosis was recorded (except for prescribed medicines); these claims and encounter records might have been for specific behavioral health services or for physical health or other services. Behavioral health diagnoses cover *International Classification of Diseases, Ninth Revision, Clinical Modification* (ICD-9-CM) codes categorized by the Chronic Illness and Disability Payment System (CDPS) payment code methodology. Partial-benefit enrollees and states with incomplete or low-quality managed care encounter data (Illinois, Maryland, Massachusetts, Mississippi, Nevada, Pennsylvania, Ohio, South Carolina, Utah, West Virginia, and the District of Columbia) have been excluded from the analysis.

Analysis includes about 450 children dually eligible for Medicare and Medicaid.

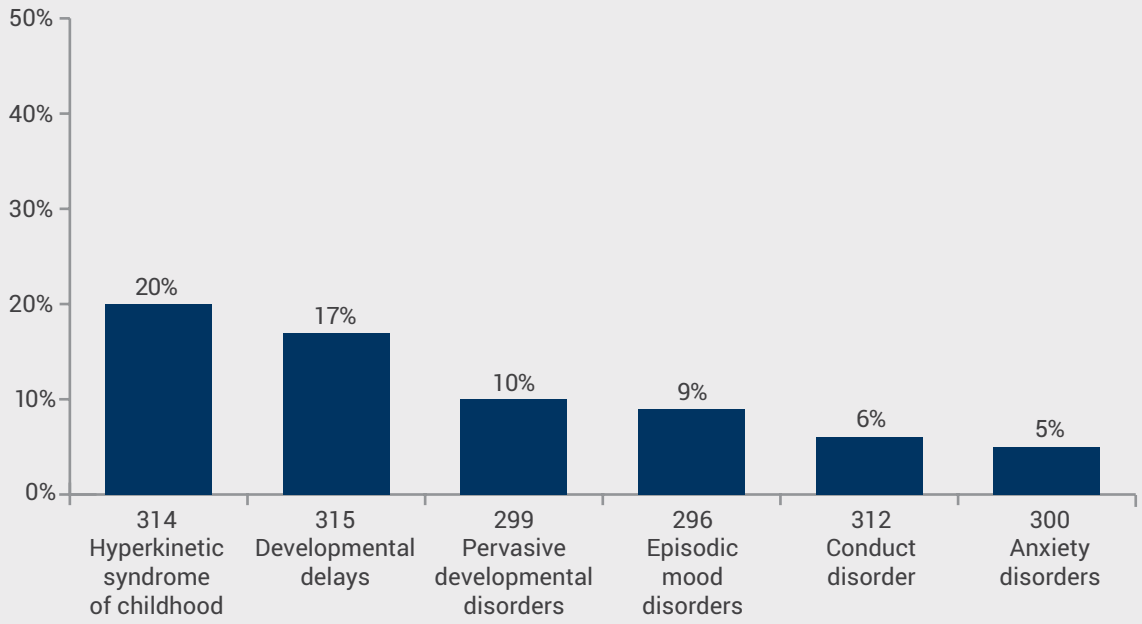
Source: MACPAC analysis of 2011 Medicaid Statistical Information System (MSIS) data.

health diagnosis, representing nearly 700,000 children. Using a different subset of Medicaid-enrolled children under age 21, among those qualifying for Supplemental Security Income (SSI) in 2013, 69 percent qualified based on a mental disorder (SSA 2014).

The most common diagnoses for children who qualified for Medicaid on the basis of disability in 2011were hyperkinetic syndrome of childhood (ADD/ADHD), specific developmental delays, pervasive developmental disorders, including autism spectrum disorders, and episodic mood disorders (which includes bipolar disorder and major depressive disorder) (Figure 4-6). More than 5 percent had anxiety or conduct disorders or adjustment reaction disorders (Figure 4-6). To qualify for Medicaid on the basis of disability, these children would have to have had substantial physical or intellectual limitations.

Of all Medicaid-enrolled children with behavioral health diagnoses, those eligible for Medicaid on the basis of disability had higher average total Medicaid expenditures than children in the other eligibility groups—about $19,000 per child, compared to

FIGURE 4-6. Most Common Behavioral Health Diagnoses of Children Eligible for Medicaid on the Basis of Disability, 2011



Notes: Enrollees with a behavioral health diagnosis are defined as persons who had any Medicaid fee-for-service claim or managed care encounter record where a behavioral health diagnosis was recorded (except for prescribed medicines); these claims and encounter records might have been for specific behavioral health services or for physical health or other services. Behavioral health diagnoses cover *International Classification of Diseases, Ninth Revision, Clinical Modification* (ICD-9-CM) codes categorized by the Chronic Illness and Disability Payment System (CDPS) payment code methodology. Partial-benefit enrollees and states with incomplete or low-quality managed care encounter data (Illinois, Maryland, Massachusetts, Mississippi, Nevada, Pennsylvania, Ohio, South Carolina, Utah, West Virginia, and the District of Columbia) have been excluded from the analysis.

Source: MACPAC analysis of 2011 Medicaid Statistical Information System (MSIS) data.

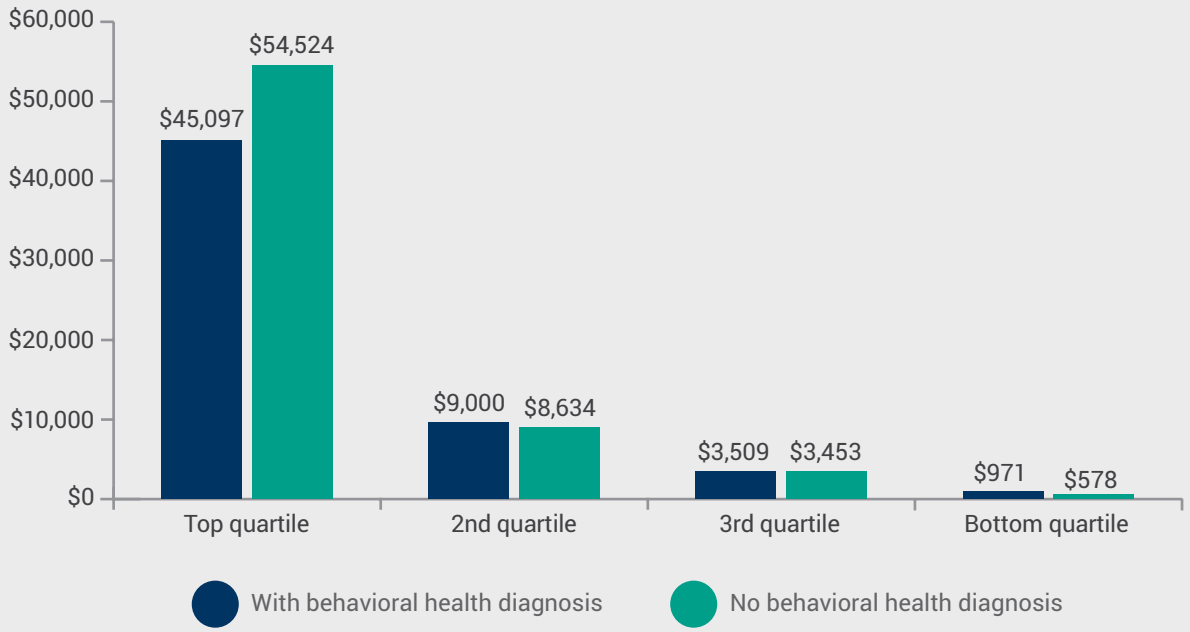
about $11,000 per child eligible based on child welfare assistance and $4,500 per child eligible on a basis other than disability or child welfare assistance (Table 4-1). In the top quartile, average per capita spending for children with a behavioral health diagnosis and eligible for Medicaid on the basis of disability was in the range of $45,000; however, average per capita spending for children eligible for Medicaid on the basis of disability with no behavioral health diagnosis was even higher. Almost by definition, these children have service needs that are expensive to treat whether or not they have behavioral health conditions.

Adults Under Age 65

Among adults not dually eligible for Medicare and Medicaid, about 3.8 million adult Medicaid enrollees had a behavioral health diagnosis in 2011 (Table 4-1). About 40 percent (1.5 million) of non-dually eligible adults qualified on the basis of disability; the remainder (2.2 million) qualified through having low household income, pregnancy status, or some other basis of eligibility, such as a medically needy pathway.

The demand for Medicaid behavioral health services may increase in states that have chosen to expand Medicaid eligibility under the ACA to more adults under age 65. This would be both due to increased

FIGURE 4-7. Total Medicaid Spending Per Enrolled Child Eligible for Medicaid on the Basis of Disability, with and without a Behavioral Health Diagnosis, 2011



Notes: Enrollees with a behavioral health diagnosis are defined as persons who had any Medicaid fee-for-service claim or managed care encounter record where a behavioral health diagnosis was recorded (except for prescribed medicines); these claims and encounter records might have been for specific behavioral health services or for physical health or other services. Behavioral health diagnoses cover *International Classification of Diseases, Ninth Revision, Clinical Modification* (ICD-9-CM) codes categorized by the Chronic Illness and Disability Payment System (CDPS) payment code methodology. Partial-benefit enrollees and states with incomplete or low-quality managed care encounter data (Illinois, Maryland, Massachusetts, Mississippi, Nevada, Pennsylvania, Ohio, South Carolina, Utah, West Virginia, and the District of Columbia) have been excluded from the analysis.

Analysis includes about 14,000 children dually eligible for Medicare and Medicaid.

Source: MACPAC analysis of 2011 Medicaid Statistical Information System (MSIS) data.

enrollment overall and because the expansion extends Medicaid eligibility to low-income adults under age 65 who did not previously have health insurance. Some of these adults may be homeless or have experiences with the criminal justice, social welfare, or substance use treatment systems—populations in which there are a disproportionate share of people with behavioral health conditions (NHCCC 2013; Garfield et al. 2011).

Prevalence of behavioral health conditions in all adults under age 65

About 26 percent of all noninstitutionalized adults age 18–64 were considered to have a behavioral health disorder (Table 4-3). About 20 percent had a mental disorder. Medicaid enrollees were more likely to have moderate, mild, or serious mental illness than privately insured or uninsured people in that age group. They were also more likely to have had a major depressive episode or suicidal plans in the prior year.

TABLE 4-3. Mental Health Status and Treatment for Non-Institutionalized Adults Age 18–64 by Insurance Status, 2010–2012

	All adults age 18–64 years[3]	Percentage of adults by insurance status		
		Private	Medicaid	Uninsured
Categorical mental illness indicator[1, 2]				
None	80.4	83.3*	68.6	78.6*
Mild mental illness	9.8	9.0*	13.3	10.4*
Moderate mental illness	5.2	4.5*	8.4	5.5*
Serious mental illness	4.6	3.3*	9.7	5.4*
Major depressive episode in past year	7.7	6.2*	13.8	8.1*
Suicidal plans in past year	1.2	0.8*	2.9	1.7*
Concurrent serious mental illness and drug or alcohol dependence or abuse	1.2	0.8*	2.5	1.8*
Any mental illness or drug abuse (mutually exclusive)	25.7	22.3*	36.9	29.5*
Ever received drug or alcohol treatment	7.1	5.2*	11.8	10.0*
Received any mental health treatment in past year	14.7	14.2*	23.7	10.1*
Type of mental health treatment received in past year (categories below sum to 100%)				
Inpatient only	0.2	0.1*	0.5	0.3*
Outpatient only	2.1	2.4	2.0	1.4*
Prescription medications only	7.0	7.1*	9.3	4.7*
Inpatient and outpatient only	0.1	0.0†	0.2	0.1
Inpatient and medications only	0.2	0.1*	0.5	0.2*
Outpatient and medications only	4.8	4.4*	9.2	3.1*
Inpatient, outpatient, and medications	0.4	0.2*	2.0	0.4*
No mental health treatment	85.3	85.8*	76.3	89.9*
Perceived need but did not receive mental health treatment in past year	5.6	4.4*	9.3	7.0*

Notes: Insurance categories are mutually exclusive using a hierarchy: Respondents reporting private insurance and Medicaid at the time of their survey are considered to have Medicaid. Respondents with Medicare coverage are excluded because of the small sample of these people who are under age 65.

[1] Indicators were determined using the 2012 revised model for estimates of the prevalence of any mental illness and serious mental illness. (For a discussion of methodology, see Kott et al. 2013).

[2] Mental illness is based on a series of survey questions that are correlated with having mental illness and that are incorporated into a scale. A statistical model was developed to determine what point on the scale would be used to assign the category of mental illness to each respondent. Respondents whose answers for specific questions have a scale value above the cut point and whose responses to additional questions meet certain criteria are designated as having mental illness. Respondents with serious mental illness also have serious functional impairment (Kott et al. 2013).

[3] Includes adults with other coverage, including any type of military health plan (TRICARE, CHAMPUS, CHAMPVA) or other government-sponsored programs.

† Estimate is greater than zero but less than 0.05.

* Difference from Medicaid is statistically significant at the 0.05 level.

Source: MACPAC analysis of the National Survey on Drug Use and Health, 2010–2012.

TABLE 4-4. Sociodemographic Characteristics of Non-Institutionalized Adults Age 18–64 with Any Mental Illness or Substance Use Disorder by Insurance Status, 2010–2012

Sociodemographic characteristics	Adults age 18–64 with any mental illness or substance use disorder				
	Total population[1,2]		Percentage by insurance status		
	Number[1,2] n = 43,096,512	Percent	Private	Medicaid	Uninsured
Age					
18–49	31,796,902	73.8%	73.1	72.2	82.6*
50–64	11,299,610	26.2	26.9	27.8	17.4*
Sex					
Male	18,632,812	43.2	41.8*	32.2	50.0*
Female	24,463,700	56.8	58.2*	67.8	50.0*
Race/ethnicity					
White	29,588,844	68.7	76.3*	53.2	60.9*
Black	4,929,385	11.4	7.5*	22.6	13.3*
Native American	356,052	0.8	0.4*	1.6	0.6*
Pacific Islander	206,699	0.5	0.5	0.6	0.5
Asian	1,638,393	3.8	4.4*	1.9	3.4
More than one race	726,347	1.7	1.5*	2.3	1.4*
Hispanic	5,650,792	13.1	9.4*	17.8	19.7
Education					
< High school	6,525,468	15.1	6.9*	32.9	24.1*
High school graduate	12,738,867	29.6	25.1*	35.9	34.2
Some college	12,579,750	29.2	30.4*	25.6	27.6
College graduate	11,252,427	26.1	37.6*	5.6	14.0*
Health status					
Excellent	6,395,632	14.8	17.8*	8.1	13.7*
Very good	14,384,949	33.4	39.6*	19.1	30.4*
Good	12,862,993	29.8	29.7	29.0	32.3*
Fair/poor	9,452,263	21.9	12.9*	43.7	23.6*
Marital status					
Married	17,533,776	40.7	51.2*	19.9	28.4*
Widowed	1,053,474	2.4	2.1*	4.1	1.5*
Divorced or separated	8,341,799	19.4	13.8*	31.6	22.8*
Never married	16,167,463	37.5	32.9*	44.4	47.2
Federal poverty level					
< 100% FPL	9,106,680	21.3	7.1*	58.6	30.4*
100%–199% FPL	9,678,248	22.6	14.2*	28.4	36.9*
≥ 200% FPL	24,053,786	56.1	78.7*	13.0	32.7*
Employment status					
Work full time	20,346,723	47.2	63.1*	12.9	38.3*
Work part time	7,030,479	16.3	15.7*	13.7	19.0*
Unemployed	3,982,118	9.2	4.3*	12.0	20.3*
Other	11,737,192	27.2	16.9*	61.4	22.4*
Family receives SSI	4,900,521	11.4	4.7*	38.7	8.0*

Notes: FPL is federal poverty level. SSI is Supplemental Security Income. Insurance categories are mutually exclusive using a hierarchy: Respondents reporting private insurance and Medicaid at the time of their survey interview are considered to have Medicaid. Respondents with Medicare coverage are excluded because of the small sample of these people who are under age 65.

[1] Includes adults with other coverage, including any type of military health plan (TRICARE, CHAMPUS, CHAMPVA) or other government-sponsored programs.

TABLE 4-4. (continued)

[2] Mental illness is based on a series of survey questions that are correlated with having mental illness and that are incorporated into a scale. A statistical model was developed to determine what point on the scale would be used to assign the category of mental illness to each respondent. Respondents whose answers for specific questions have a scale value above the cut point and whose responses to additional questions meet certain criteria are designated as having mental illness. Respondents with serious mental illness also have serious functional impairment (Kott et al. 2013).

* Difference from Medicaid is statistically significant at the 0.05 level.

Source: MACPAC analysis of three years of the National Survey on Drug Use and Health, 2010–2012.

Adult Medicaid enrollees with behavioral health problems differed socioeconomically from both their privately insured and their uninsured counterparts. Their income was lower and they were more likely to be female and to have less than a high school education. They were also less likely to be married or employed (Table 4-4). They were more likely to be black than either their privately insured or uninsured counterparts. And they were substantially more likely to report having SSI than other insured or uninsured people, which is logical given that SSI confers Medicaid eligibility.

Adult Medicaid enrollees with any mental illness or substance use disorder are more likely to report having worse overall health status than those with private coverage or who are uninsured (MACPAC 2014a). Forty-four percent of adult Medicaid enrollees age 18–64 reported having fair or poor overall health status compared to 24 percent of uninsured and 13 percent of privately insured adults with any mental illness or substance use disorder (Table 4-4). Among adults age 18–64 with reported Medicaid coverage who were designated as having serious mental illness, 56 percent reported having fair or poor overall health status (MACPAC 2014a).

Comorbid medical and behavioral health conditions

Many people with serious behavioral health disorders have a substantial number of comorbid acute or chronic medical conditions. This is true regardless of insurance coverage (Parks et al. 2006). They also have worse health outcomes than privately insured or uninsured adults. People with serious mental illness die approximately 25 years earlier than the general population in part due to preventable conditions, including cardiovascular disease, smoking-related conditions, obesity, and lack of attention to health. While suicide and injury account for about 30 percent to 40 percent of excess mortality, 60 percent of premature deaths in persons with schizophrenia are estimated to be due to medical conditions such as cardiovascular, pulmonary and infectious diseases (Parks et al. 2006). Polypharmacy, the use of multiple prescription drugs, is common among those with behavioral conditions; substance use can also produce poor health outcomes and metabolic syndrome. While these factors are concentrated among those with serious mental illness, symptoms and disorders caused by polypharmacy in particular can also be problematic for those with less severe behavioral health disorders (see Chapter 5 of this report).

Medical and behavioral health conditions may interact to exacerbate both sets of conditions. For example, behavioral health medications may cause medical side effects. Moreover, medical conditions or treatment may cause behavioral health disorders or make them worse. Some drugs prescribed for medical conditions may cause dementia or mood disorders (Parks et al. 2006; MHPA 2012).

Not surprisingly, a high prevalence of comorbid behavioral health and medical conditions is associated with high use of health services. For example, beneficiaries with chronic physical

conditions are also more likely to be hospitalized when they have a mental illness or drug and alcohol disorder. A study by Boyd and colleagues estimated that the addition of a mental illness to one or more common chronic physical conditions is associated with a 60 percent to 75 percent increase in health care costs for an individual. Adding a co-occurring mental illness plus a drug or alcohol disorder results in a two- to three-fold increase in health care (Boyd et al. 2010).

Adult Medicaid enrollees not dually enrolled in Medicare and Medicaid with behavioral health diagnoses were considerably more likely to have a number of concurrent chronic medical conditions than adult enrollees with no behavioral health diagnosis, regardless of eligibility basis. Common chronic conditions included cancer, cardiac disease, hypertension, kidney disease, and arthritis (Table 4-5). Adults with behavioral health diagnoses also had higher rates of chronic diseases associated with tobacco and alcohol use, such as chronic obstructive pulmonary disease, asthma, and chronic liver disease and cirrhosis.

Use of health services by adults age 18–64 with behavioral health conditions

To put adult Medicaid expenditures in context, it should be noted that behavioral health expenditures, and mental health expenditures in particular, are high for adults in general. Based on data from the Medical Expenditure Panel Survey, prescription medications accounted for 45 percent, or $21.7 billion in 2011 dollars, of mental health expenditures for all non-institutionalized adults age 18–64 in 2009–2011. Another 27.2 percent of mental health spending for adults age 18–64, or $13.1 billion in 2011 dollars, was attributed to outpatient and office-based medical visits. The remaining share of spending on mental health care for adults age 18–64 in 2009–2011 was for emergency room visits, at 1.8 percent ($853 million); home health care, at 9.6 percent ($4.62 billion); and inpatient stays due to mental health disorders, at 16.5 percent ($7.95 billion) (Zibman 2014).

Nearly one-quarter (24.2 percent) of expenditures for treatment of mental health disorders for adults age 18–64 was paid for by Medicaid. (Note the specific expense category across all adult enrollees is different from our calculations of total Medicaid expenditures for specific enrollees with behavioral health diagnoses.) Private insurance paid almost one-third of expenses, at 32.9 percent, patients paid 16.7 percent out of pocket, and Medicare paid for 14.3 percent (Zibman 2014).

Based on the National Survey on Drug Use and Health, almost one-quarter (24 percent) of adults age 18–64 with Medicaid coverage reported receiving some mental health treatment during the past year, compared to 14 percent of privately insured and 10 percent of uninsured adults under age 65 (Table 4-3). Given that more than half of adult Medicaid enrollees with behavioral health conditions qualify on the basis of disability, it is perhaps not surprising that a higher percentage of people with Medicaid coverage have behavioral health conditions than do those with private coverage. A study of 2009–2011 data found that adults who only had public insurance (27.7 percent) were more likely than adults with any private insurance (14.1 percent) or uninsured adults (7.0 percent) to have had a mental health-related expense (Zibman 2014).

Despite the fact that Medicaid enrollees were more likely than privately insured adults to have received mental health treatment in the past year, they were also more likely to report not receiving needed mental health treatment (Table 4-3). Almost one-quarter of adults under age 65 with either mental illness or substance use disorders reported not receiving needed mental health care; among adult Medicaid enrollees under age 65 with serious mental illness—the group most in need of services—41 percent reported not receiving needed mental health treatment (MACPAC 2014a).

TABLE 4-5. Comorbid Medical Conditions among Non-Dually Eligible Adults Age 21–64 with and without a Behavioral Health Diagnosis by Basis of Eligibility, 2011

Medical condition	Non-dually eligible adult Medicaid enrollees age 21–64			
	Eligible on basis of disability		Eligible on basis other than disability	
	Percent with behavioral health diagnosis	Percent without behavioral health diagnosis	Percent with behavioral health diagnosis	Percent without behavioral health diagnosis
Cardiac disease	54%	38%	28%	13%
Hypertension	41	30	17	8
Rheumatism, excluding the back	33	17	25	8
Kidney disease	29	18	22	10
Diabetes	22	18	8	5
Arthritis	19	11	9	3
Cancer	14	10	9	5
Asthma	14	6	10	3
Cerebrovascular disease	10	5	3	1
Chronic liver disease and cirrhosis	5	2	2	1
Average number of chronic conditions (of those listed above) per enrollee (sum of above)	**2.7**	**1.7**	**1.5**	**0.6**

Notes: Enrollees with a behavioral health diagnosis are defined as persons who had any Medicaid fee-for-service claim or managed care encounter record where a behavioral health diagnosis was recorded (except for prescribed medicines); these claims and encounter records might have been for specific behavioral health services or for physical health or other services. Behavioral health diagnoses cover *International Classification of Diseases, Ninth Revision, Clinical Modification* (ICD-9-CM) codes categorized by the Chronic Illness and Disability Payment System (CDPS) payment code methodology. Partial-benefit enrollees and states with incomplete or low-quality managed care encounter data (Illinois, Maryland, Massachusetts, Mississippi, Nevada, Pennsylvania, Ohio, South Carolina, Utah, West Virginia, and the District of Columbia) have been excluded from the analysis.

Source: MACPAC analysis of 2011 Medicaid Statistical Information System (MSIS) data.

Non-Dually Eligible Adults under Age 65

About 20 percent of adults with behavioral health diagnoses who qualify for Medicaid on any basis are eligible for Medicare as well—that is, they are dually eligible for both Medicare and Medicaid. Among adults with a behavioral health diagnosis who qualify for Medicaid on the basis of a disability, 40 percent are dually eligible. Because dually eligible Medicaid enrollees receive services from Medicare as well as from Medicaid, and because of the high percentage of dually eligible adults who qualify for Medicaid on the basis of a disability, using only Medicaid service data to calculate spending for behavioral health care services for this population is likely to result in incorrect and incomplete expenditure data. Therefore in the following analysis of behavioral health care service use by adults, we present findings for non-dually eligible adults and dually eligible adults separately.

Non-dually eligible adults age 21–64 qualifying on the basis of disability

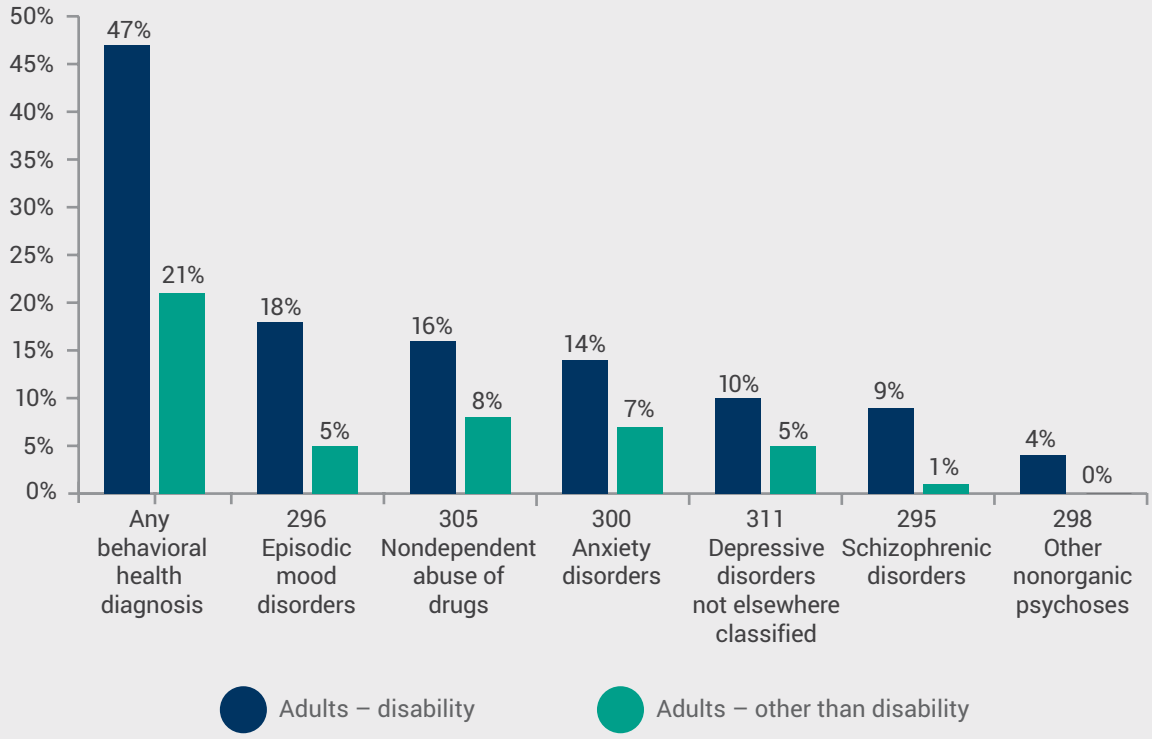
Eligibility for SSI confers Medicaid eligibility in most states, and about one-third of SSI recipients in this age group qualify on the basis of a mental health condition (SSA 2014). These mental health conditions include not only depressive, bipolar,

and psychotic disorders, but also autism spectrum, intellectual, and developmental disorders (SSA 2014). Almost half of non-dually eligible adults under age 65 eligible for Medicaid on the basis of disability had a behavioral health diagnosis (1.5 million), accounting for 63 percent of total expenditures for this eligibility category (Table 4-1 and Figure 4-8).

One out of every 10 persons in this group had a schizophrenic disorder, the highest prevalence of any age and eligibility group in our analysis (Figure 4-8). Eighteen percent had a diagnosis of an episodic mood disorder (including bipolar disorder and major depressive disorders) and 14 percent had a diagnosis associated with an anxiety disorder.

Non-dually eligible adults qualifying on the basis of disability have expenditures similar to children who qualify on the basis of disability, with considerably higher expenditures than other adult enrollees (Figure 4-9). The distribution of total expenditures between enrollees with a behavioral health diagnosis and those without is similar in all quartiles.

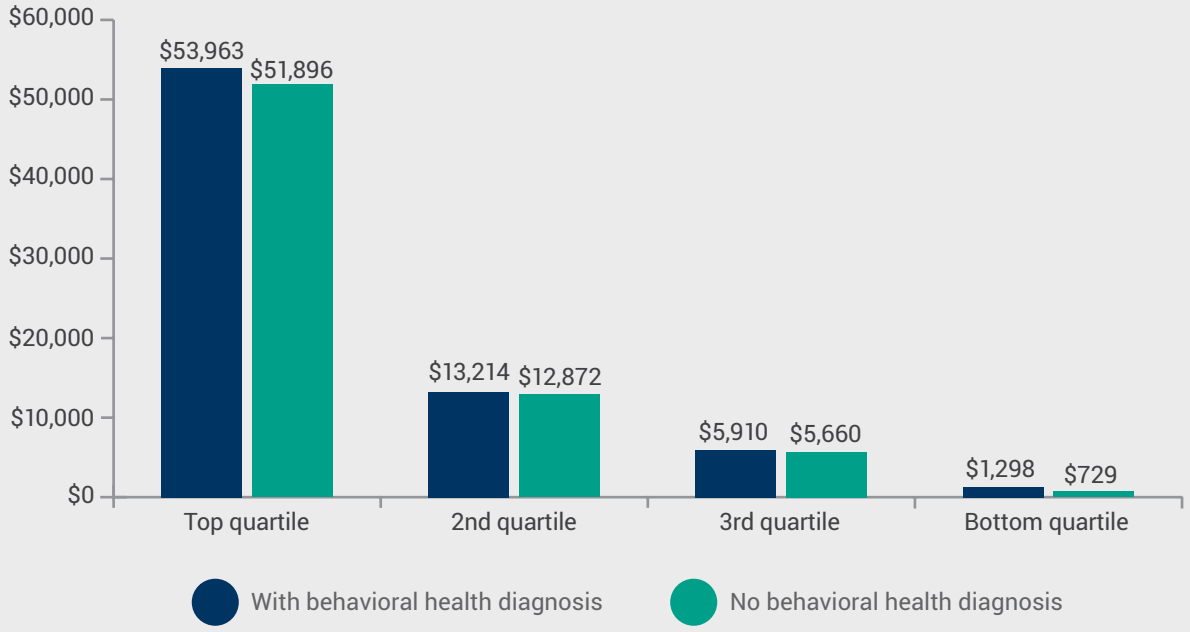
FIGURE 4-8. Most Common Behavioral Health Diagnoses for Non-Dually Eligible Adults Age 21–64 Enrolled in Medicaid, by Basis of Eligibility, 2011



Notes: Enrollees with a behavioral health diagnosis are defined as persons who had any Medicaid fee-for-service claim or managed care encounter record where a behavioral health diagnosis was recorded (except for prescribed medicines); these claims and encounter records might have been for specific behavioral health services or for physical health or other services. Behavioral health diagnoses cover *International Classification of Diseases, Ninth Revision, Clinical Modification* (ICD-9-CM) codes categorized by the Chronic Illness and Disability Payment System (CDPS) payment code methodology. Partial-benefit enrollees and states with incomplete or low-quality managed care encounter data (Illinois, Maryland, Massachusetts, Mississippi, Nevada, Pennsylvania, Ohio, South Carolina, Utah, West Virginia, and the District of Columbia) have been excluded from the analysis.

Source: MACPAC analysis of 2011 Medicaid Statistical Information System (MSIS) data.

FIGURE 4-9. Total Medicaid Spending Per Non-Dually Eligible Adult Age 21–64 Enrolled in Medicaid on the Basis of Disability, with and without a Behavioral Health Diagnosis, 2011



Notes: Enrollees with a behavioral health diagnosis are defined as persons who had any Medicaid fee-for-service claim or managed care encounter record where a behavioral health diagnosis was recorded (except for prescribed medicines); these claims and encounter records might have been for specific behavioral health services or for physical health or other services. Behavioral health diagnoses cover *International Classification of Diseases, Ninth Revision, Clinical Modification* (ICD-9-CM) codes categorized by the Chronic Illness and Disability Payment System (CDPS) payment code methodology. Partial-benefit enrollees and states with incomplete or low-quality managed care encounter data (Illinois, Maryland, Massachusetts, Mississippi, Nevada, Pennsylvania, Ohio, South Carolina, Utah, West Virginia, and the District of Columbia) have been excluded from the analysis.

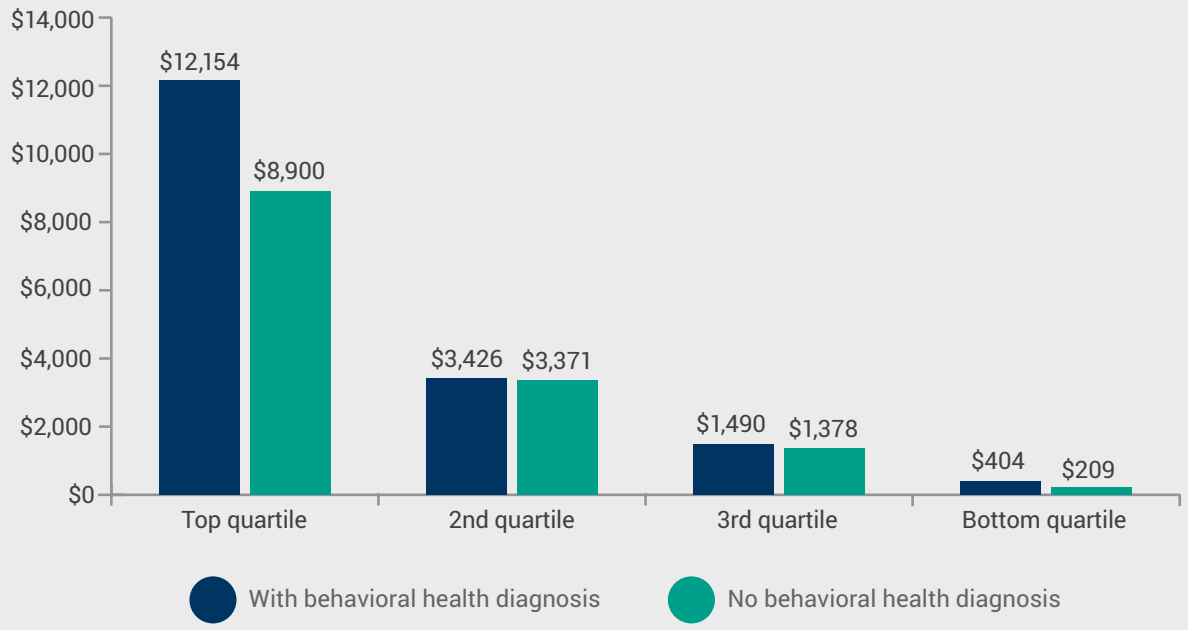
Source: MACPAC analysis of 2011 Medicaid Statistical Information System (MSIS) data.

Adults age 21–64 qualifying on a basis other than disability

This group of Medicaid beneficiaries includes pregnant women, people qualifying on the basis of low family income alone, and people eligible through other pathways. About 2.3 million, or 21 percent, of the adults in this category had a behavioral health diagnosis, accounting for 39 percent of total expenditures for this group. The most common diagnoses in this population were anxiety disorders and non-dependent abuse of drugs (Figure 4-8). Many states have implemented Medicaid initiatives to improve identification and treatment of behavioral health conditions among pregnant women—primarily through psychosocial counseling and substance use disorder treatment—in order to improve perinatal outcomes (Johnson and Witgert 2010).

Adults in this category who had behavioral health diagnoses had higher total expenditures than those who did not ($7,000 versus $3,000) and this relationship holds throughout the total expenditure distribution (Table 4-1 and Figure 4-10). Not surprisingly, enrollees in this category, regardless of mental health diagnosis status, had considerably lower total expenditures than did non-dually eligible adults enrolled on the basis of disability.

FIGURE 4-10. Total Medicaid Spending Per Adult Age 21–64 Enrolled in Medicaid on a Basis Other than Disability, with and without a Behavioral Health Diagnosis, 2011



Notes: Enrollees with a behavioral health diagnosis are defined as persons who had any Medicaid fee-for-service claim or managed care encounter record where a behavioral health diagnosis was recorded (except for prescribed medicines); these claims and encounter records might have been for specific behavioral health services or for physical health or other services. Behavioral health diagnoses cover *International Classification of Diseases, Ninth Revision, Clinical Modification* (ICD-9-CM) codes categorized by the Chronic Illness and Disability Payment System (CDPS) payment code methodology. Partial-benefit enrollees and states with incomplete or low-quality managed care encounter data (Illinois, Maryland, Massachusetts, Mississippi, Nevada, Pennsylvania, Ohio, South Carolina, Utah, West Virginia, and the District of Columbia) have been excluded from the analysis.

Data include approximately 104,000 dually eligible enrollees.

Source: MACPAC analysis of 2011 Medicaid Statistical Information System (MSIS) data.

Enrollees Dually Eligible for Medicare and Medicaid

About 20 percent of the full-benefit Medicaid enrollees that we identified as having a behavioral health condition using Medicaid data alone also qualify for Medicare (MACPAC 2015). As discussed above, because dually eligible enrollees receive services from both Medicare and Medicaid, assessing whether they have a behavioral health condition based on Medicaid data alone likely underestimates the prevalence of these conditions in this group. For example, among adults under age 65 with fee-for-service coverage in 2010, when only Medicaid claims were examined, the prevalence of depressive disorders based on service use was the same for non-dually eligible adults enrolled on the basis of disability as it was for dually eligible enrollees—11 percent. However, when Medicare claims were also examined, the prevalence among dually eligible enrollees under age 65 increased to 27 percent (MedPAC and MACPAC 2015).

Dually eligible for Medicare and Medicaid enrollees age 65 and older

Behavioral health disorders among adults age 65 and older are associated with functional disability, cognitive impairment, compromised quality of life, increased health care utilization and costs, barriers to preventive care, poor health outcomes, and mortality. As summarized in a 2012 Institute of Medicine report, the many complex interactions among behavioral health conditions, coexisting physical health conditions, and cognitive, functional, and sensory impairments complicate efforts to produce prevalence estimates of behavioral health conditions for older populations (IOM 2012).

Adults age 65 and older in need of behavioral health services include those with serious and persistent mental illnesses; those with mental health problems that develop later in life, such as dementia, late onset schizophrenia, alcohol and prescription drug abuse, anxiety, and depression; and those facing the developmental challenges of old age, such as role changes, loss of friends and relatives, and declining functional abilities. Like others with mental health conditions, adults age 65 and older face challenges of stigma, discrimination, poverty, and isolation. But there are also concerns unique to this age group, including false beliefs that depression is a normal part of aging, that adults age 65 and older cannot recover from mental illnesses or substance use disorders, and that adults age 65 and older are no longer productive members of society (NAMHPAC 2007). This contributes to under-diagnosis, or misdiagnosis, of behavioral health conditions in this population.

Because of the high prevalence of comorbid behavioral health and medical conditions in this population, mental health has a strong impact on physical health and vice versa. For example, adults age 65 and older with physical health conditions such as heart disease have higher rates of depression than those who are medically well. Conversely, untreated depression in an older person with heart disease can negatively affect health outcomes and increase the costs of treating the physical disease due to factors such as the person not complying with treatment regimens or making suggested lifestyle changes (WHO 2013; Blazer 2003).

Prevalence of behavioral health and comorbid medical diagnoses among dually eligible Medicare and Medicaid enrollees

Even given the caveats noted above about underestimating the prevalence of behavioral health conditions in the population age 65 and older, more than one-quarter of dually eligible enrollees age 65 and older had a fee-for-service claim with a diagnosis of Alzheimer's disease or related dementia, and almost one-fifth had a diagnosis of depression (Table 4-6). These percentages are considerably higher than for the non-dually eligible Medicare-only population age 65 and older (adults age 65 and older who do not have Medicaid coverage, including those with private supplemental coverage). In particular, the percentage of schizophrenia and other psychotic disorders among dually eligible enrollees, at 7 percent, is higher than most other groups (at 9 percent, Table 4-6).

The under-65 dually eligible population also has a high prevalence of many behavioral health conditions. Based on Medicare and Medicaid data, 15 percent of this population had a diagnosis of schizophrenia, a higher percentage than even non-dually eligible adults under age 65 enrolled in Medicaid on the basis of disability (at 9 percent, Table 4-6). Other common behavioral health diagnoses are depressive disorders and anxiety disorders. In addition, 14 percent of dually eligible adults under age 65 had a diagnosis of bipolar disorder.

TABLE 4-6. Behavioral Health Conditions of Adults Dually Enrolled in Fee-for-Service Medicaid and Medicare and Non-Dually Eligible Adults Enrolled in Fee-for-Service Medicare, 2010

Behavioral health conditions	Adults dually eligible for Medicare and Medicaid		Non-dually eligible Medicare beneficiaries	
	Number	Percent	Number	Percent
Adult enrollees age 65 and older (total)	**3,596,395**		**22,582,221**	
Alzheimer's or related dementia	849,628	24%	1,698,680	8%
Anxiety disorders	411,442	11	1,264,621	6
Bipolar disorder	97,542	3	149,626	1
Depressive disorders	685,555	19	1,753,441	8
Schizophrenia and other psychotic disorders	246,647	7	276,451	1
Adult enrollees under age 65 (total)	**2,784,308**			
Alzheimer's or related dementia	103,594	4	—	—
Anxiety disorders	567,648	20	—	—
Bipolar disorder	400,009	14	—	—
Depressive disorders	759,997	27	—	—
Schizophrenia and other psychotic disorders	403,756	15	—	—

Notes: Fee-for-service population excludes individuals with at least one month of enrollment in a Medicare Advantage plan or a comprehensive Medicaid managed care plan. Behavioral health conditions were identified by running Centers for Medicare & Medicaid Services (CMS) Chronic Condition Warehouse (CCW) flag algorithms on Medicare fee-for-service claims for non-dually eligible beneficiaries and on Medicare and Medicaid fee-for-service claims for dually eligible beneficiaries.

Source: MACPAC analysis of data sources described in MedPAC and MACPAC 2015.

Dually eligible adults enrolled in Medicare and Medicaid and receiving full benefits were about twice as likely as non-dually eligible Medicare-only beneficiaries to have at least three chronic conditions, and they were nearly three times more likely to have been diagnosed with a mental illness (CBO 2013). In 2009, 43.8 percent of dually eligible Medicare and Medicaid enrollees had at least one mental or cognitive condition compared to 18.5 percent of all other Medicare beneficiaries. About half of dually eligible Medicare and Medicaid enrollees age 18–64 and 80 or older had at least one mental or cognitive condition; the percentage with at least one mental or cognitive condition was closer to one-third for those age 65–79 (Kasper et al. 2010). Late-life mood and anxiety disorders are common and often co-occurring among older non-institutionalized adults.

Medicaid use and expenditures for dually eligible Medicare and Medicaid enrollees age 65 and older with behavioral health conditions

Over 50 percent of adults age 65 and older who are symptomatic for a clinical diagnosis do not use mental health services (Byers et al. 2012). Little is known about why these adults, despite symptoms of mood and anxiety disorders, do not seek services. High levels of spending notwithstanding, behavioral health services are under-utilized by this group. Fewer than 3 percent of all adults age 65 and older report seeing a mental health professional for treatment, a rate lower than that of any other adult age group. Instead, adults age 65 and older tend to seek mental health treatment in primary care, a system stressed by the demands of complex medical disorders and severe time constraints (Bartels et al. 2004).

Adults age 65 and older with both Medicare and Medicaid coverage have higher expenditures than those without Medicaid coverage, particularly those using long-term services and supports. A Congressional Budget Office study found that in 2009, total Medicare and Medicaid spending was much higher for full-benefit dually eligible enrollees who had a mental illness and at least one other chronic condition than for other fully eligible dually enrolled beneficiaries ($48,200, on average, versus $28,600) (CBO 2014). For the 20 percent of dually eligible individuals with more than one mental health diagnosis, annual spending per capita averaged more than $38,000—twice as high as average annual per capita spending for the dually eligible population as a whole (Hamblin 2011).

This chapter is a first step in quantifying the importance of behavioral health to Medicaid enrollees as well as in exploring the diversity of diagnoses and treatment needs. Although severely mentally ill beneficiaries enrolled on the basis of disability incur the highest cost per person, they comprise a relatively small share of total enrollees. On the other hand, many Medicaid beneficiaries enrolled on a basis other than disability may nevertheless be in need of behavioral health screening, treatment, and referral; more specialized services would help them delay or prevent future loss of function. MACPAC will continue to focus on the specific needs of each of these groups, targeting policies and interventions designed to improve care and contain costs.

Conclusion

Providing services to Medicaid enrollees with behavioral health conditions in the most cost-effective manner is of great interest to state and federal policymakers. Overall, enrollees with a behavioral health diagnosis account for 20 percent of enrollees but almost half of all Medicaid spending (including spending for medical, behavioral health and other covered Medicaid services). For some age and eligibility groups, enrollees with behavioral health diagnoses account for an even higher percentage of enrollees and total Medicaid costs. For instance, almost half of non-dually eligible adults enrolled in Medicaid on the basis of a disability had a behavioral health diagnosis in 2011, as did almost half of Medicaid-enrolled children qualifying on the basis of disability (Table 4-1). Children qualifying for Medicaid on the basis of child welfare assistance who had behavioral health diagnoses accounted for 44 percent of all children but 78 percent of total expenditures in that eligibility group. And about half of dually eligible Medicare and Medicaid enrollees age 18–64 and 80 or older had at least one mental or cognitive condition.

Endnotes

[1] As discussed in Chapter 5 of this report, beneficiaries may be prescribed behavioral health drugs even without a behavioral health diagnosis, and drugs categorized as behavioral health drugs may be used for non-behavioral health conditions (e.g., seizures).

[2] The *International Classification of Diseases, Ninth Revision, Clinical Modification* (ICD-9-CM) is the official system of assigning codes to diagnoses and procedures associated with health care utilization in the United States.

[3] Studies vary in terms of the actual diagnoses used to identify behavioral health conditions. The CDPS includes all ICD-9-CM diagnosis codes that are classified as mental disorders (codes 290–319), and substance use disorder codes are included in the mental disorder classification. Some studies do not count persistent developmental disabilities as behavioral health disorders. The most common specific behavioral health diagnoses are broken out for each age and disability group.

[4] Although the National Survey of Children's Health asks separate questions about whether children are covered by Medicaid or CHIP, these two categories are combined because validation studies have determined that respondents cannot accurately distinguish between these two programs.

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APPENDIX 4A: Background on Data and Methods

Statistics presented in this chapter are based on several data sources. MACPAC conducted its own analysis of the National Survey of Children's Health, the National Survey on Drug Use and Health, and the Medicaid Statistical Information System (MSIS).

National Survey of Children's Health (NSCH). The NSCH is a random-digit dial telephone survey sponsored by the Health Resources and Services Administration and administered by the National Center for Health Statistics. The 2010–2012 survey had 95,677 respondents for non-institutionalized children between the ages of 0 and 17 years. Although the survey asks separately about participation in Medicaid and the State Children's Health Insurance Program (CHIP), estimates for the programs generally are not reported separately, in part due to concerns that respondents may not always know which program provides their coverage.

National Survey on Drug Use and Health (NSDUH). The NSDUH is an annual nationwide survey involving interviews with approximately 70,000 randomly selected individuals age 12 and older from residents of households and non-institutional group quarters (e.g., shelters, rooming houses, dormitories) and from civilians living on military bases. It is the primary source of national estimates of substance use disorder and mental health status and services utilization in the United States. Among adults, estimates include rates and numbers of persons with any mental illness, serious mental illness, suicidal thoughts and behavior, and major depressive episode, as well as rates of treatment for depression among adults with major depressive episode and mental health service utilization. The NSDUH, however, cannot be used to estimate the presence of diagnosable mental disorders such as mild, moderate, or serious mental illness among youth (SAMHSA 2013b).

Medicaid Statistical Information System (MSIS). Data for utilization and expenditures for the Medicaid population in this report come from the 2011 MSIS. The MSIS contains demographic and enrollment-related information on each person enrolled in Medicaid and, at state option, separate CHIP programs, as well as a record of each claim paid for most services an enrollee receives.

Chronic Illness and Disability Payment System (CDPS). The CDPS, a well-known methodology developed at University of California San Diego, is a classification system that clusters Medicaid claims types by illness category and assigns corresponding claim expense. CDPS has been widely used to provide information about which categories of chronic illness are most responsible for high costs in adult populations. The CDPS includes 20 major categories of *International Classification of Diseases, Ninth Revision, Clinical Modification* (ICD-9-CM) diagnoses, which correspond to body systems or type of diagnosis.

TABLE 4A-1. Utilization and Spending for Full-Year and Part-Year Medicaid Enrollees with Behavioral Health Diagnoses by Age and Basis of Eligibility, 2011

Age group and basis of eligibility	Number of enrollees with a behavioral health diagnosis (millions)[1,2]	Total Medicaid spending for enrollees with a behavioral health diagnosis (billions)[1]	Enrollees with a behavioral health diagnosis as percentage of all enrollees	Spending for enrollees with a behavioral health diagnosis as percentage of spending by all enrollees	Total Medicaid spending per enrollee (medical, behavioral health and long-term services and supports)	
					Enrollees with a behavioral health diagnosis	Enrollees with no behavioral health diagnosis
Full-year enrollees						
Children (less than age 21)	**3.20**	**$26.22**	**18%**	**44%**	**$8,201**	**$2,295**
Basis of eligibility						
Based on disability	0.63	12.28	53	64	19,565	12,141
Based on child welfare assistance	0.25	2.93	46	79	11,774	2,656
Basis other than disability or child welfare assistance	2.32	11.01	14	30	4,745	1,886
Age group						
0–6 years	0.85	6.38	12	30	7,506	2,290
7–14 years	1.53	11.28	22	50	7,371	1,985
15–20 years	0.82	8.56	24	52	10,482	2,966
Adults (age 21–64)[1]						
Basis of eligibility						
Basis other than disability	1.31	10.32	27	43	7,904	4,018
Age group[1]						
21–44 years	1.85	26.53	35	53	14,368	6,831
45–64 years	1.55	32.48	41	58	20,953	10,541
Part-year enrollees						
Children (under age 21)	**0.91**	**$4.47**	**8%**	**21%**	**$4,932**	**$1,598**
Basis of eligibility						
Based on disability	.07	1.03	31	46	15,568	8,521
Based on child welfare assistance	.07	0.58	38	72	8,613	2,082
Basis other than disability or child welfare	.77	2.86	7	16	3,695	1,494
Age group						
0–6 years	0.24	1.52	4	12	6,424	2,168
7–14 years	0.35	1.24	10	34	3,580	811
15–20 years	0.32	1.71	12	35	5,294	1,346
Adults (age 21–64)[1]						
Basis of eligibility						
Basis other than disability, not dually eligible for Medicare and Medicaid	0.95	5.39	16	33	5,656	2,203
Age group[1]						
21–44 years	0.92	6.05	18	38	6,567	2,309
45–64 years	0.44	6.30	24	54	14,457	3,903

Notes: Enrollees with a behavioral health diagnosis are defined as persons who had any Medicaid fee-for-service claim or managed care encounter record where a behavioral health diagnosis was recorded (except for prescribed medicines); these claims and encounter records might have been for specific behavioral health services or for physical health or other services. Behavioral health diagnoses cover *International Classification of Diseases, Ninth Revision, Clinical Modification* (ICD-9-CM) codes categorized by the Chronic Illness and Disability Payment System (CDPS) payment code methodology.

TABLE 4A-1. (continued)

[1] Data for total number of enrollees, individuals under age 65 dually enrolled in Medicaid, and Medicare who qualify on the basis of disability as well as non-dually eligible enrollees age 65 or older are not displayed separately in this table because (1) for dually enrolled individuals, the number of enrollees with behavioral health diagnoses is substantially underestimated if only Medicaid data are used; and (2) for non-dually eligible enrollees age 65 or older, the population reflects a relatively small number of individuals. The total also includes part-year enrollees (see Appendix Table 4A-1 for full-year and part-year enrollee breakouts).

[2] Partial-benefit enrollees and states with incomplete or low-quality managed care encounter data (Illinois, Maryland, Massachusetts, Mississippi, Nevada, Pennsylvania, Ohio, South Carolina, Utah, West Virginia, and the District of Columbia) have been excluded from the analysis.

Source: MACPAC analysis of 2011 Medicaid Statistical Information System (MSIS) data.

TABLE 4A-2. Chronic Illness and Disability Payment System (CDPS) Behavioral Diagnosis Categories

ICD-9-CM code and description	
Behavioral health disorders common in childhood	
314	Hyperkinetic syndrome of childhood (e.g., ADD/ADHD)
315	Specific delays in development (includes speech disorders, dyslexia, and other learning disorders)
313	Disturbance of emotions specific to childhood and adolescence
309	Adjustment reaction
312	Disturbance of conduct not elsewhere classified
299	Pervasive developmental disorders (includes autism spectrum disorders)
Depression, anxiety and mood disorders	
300	Anxiety, dissociative and somatoform disorders
311	Depressive disorder not elsewhere classified (major depressive disorder falls under episodic mood disorder)
296	Episodic mood disorders (includes bipolar disorder; major depressive disorder)
Substance use disorders	
303	Alcohol dependence syndrome
305	Nondependent abuse of drugs (e.g., antidepressant abuse)
304	Drug dependence
307	Special symptoms or syndromes not elsewhere classified
291	Alcohol-induced mental disorders
292	Drug-induced mental disorders
Psychotic and personality disorders	
295	Schizophrenic disorders
298	Other nonorganic psychoses
301	Personality disorders
Other disorders	
293	Transient mental disorders due to conditions classified elsewhere
294	Persistent mental disorders due to conditions classified elsewhere

Notes: ICD-9-CM is *International Classification of Diseases, Ninth Revision, Clinical Modification* (the official system of assigning codes to diagnoses and procedures associated with hospital utilization in the United States).