FACES OF MEDICAID DATA SERIES

EXAMINING CHILDREN'S BEHAVIORAL HEALTH SERVICE USE AND EXPENDITURES, 2005-2011

CHCS Center for Health Care Strategies, Inc.

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CONTENTS

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About the Authors' Organizations

The **Center for Health Care Strategies** (CHCS) is a nonprofit policy center dedicated to improving the health of low-income Americans. It works with state and federal agencies, health plans, providers, and community-based organizations to develop innovative programs that better serve beneficiaries of publicly financed care, especially those with complex, high-cost needs. To learn more, visit **www.chcs.org**.

Human Service Collaborative (HSC) is a policy and consulting group specializing in public systems serving children, youth and families. HSC helps states, counties, and communities to develop integrated, strengths-based delivery systems for children and families at risk for involvement in multiple public systems, including child welfare, juvenile justice, behavioral health, Medicaid, and education systems.

Additional Children's Health Resources

Since 2000, CHCS has shed light on the needs of Medicaid's most complex populations through its series of *Faces of Medicaid* data analyses. For more information and resources related to this report, including analyses and findings from the 2005 and 2008 studies, visit: **www.chcs.org/childrens-faces-of-medicaid**.

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INTRODUCTION

Medicaid is a significant source of funding for behavioral health care — defined as both mental health and substance use disorder services and supports — for children and youth in the United States. However, there are few national analyses examining behavioral health care being used by children in Medicaid.

The *Faces of Medicaid Data Series: Examining Children's Behavioral Health Service Use and Expenditures, 2005-2011* study *(Children's Faces of Medicaid)*, funded principally by the Annie E. Casey Foundation, was designed to examine behavioral health service use and expenditures for children across Medicaid aid categories. These include Temporary Assistance for Needy Families (TANF) recipients; children who are eligible for Supplemental Security Income (SSI)-based Medicaid coverage, and children in foster care. The study analyzes Medicaid utilization and expenditure data from the Medicaid Analytic eXtract (MAX) system, including roughly 32 million children and youth who received Medicaid-financed services in 2011.

First conducted with 2005 MAX claims data, then 2008 MAX data, and then 2011, the most recent MAX data available, the study — now in its third edition — seeks to answer the following questions:

1. How do behavioral health service (BHS) use and expense among Medicaid-insured children vary by age, gender, race/ethnicity, aid category, and diagnosis?
2. How do psychotropic medication use and expense among Medicaid-insured children vary by age, gender, race/ethnicity, aid category, and diagnosis?
3. What physical health services are used by children who receive behavioral health care in Medicaid, and how does their physical health service use vary by age, gender, race/ethnicity, aid category, and diagnosis?
4. To what extent do children who use behavioral health care in Medicaid have comorbid physical health conditions?

By tracking the Medicaid data over time, the study is examining how utilization and expenditures have changed over time for children in Medicaid who use behavioral health care. This is an important query, as the larger Medicaid environment is undergoing significant changes. Children's behavioral health care is affected by such changes as the movement of behavioral health care and high-need populations into managed care, physical and behavioral health integration, use of health homes, value-based purchasing arrangements, and related health care reforms.

Opportunities to control overall health costs and improve outcomes for children in Medicaid with behavioral health challenges lie primarily in improving the quality of their behavioral health care. These opportunities include, for example, more selective use of psychotropic medications, improved availability of home and community alternatives to inpatient and residential treatment, improved care coordination and use of peer supports, better screening and early intervention, improvements in the availability of culturally and linguistically appropriate services, and advancements in the use of technology and data. Appropriate and timely attention to behavioral health needs also can improve children's physical health outcomes and reduce unnecessary expenditures. The new findings uncovered in this study can be used to guide state reform efforts to customize approaches for organizing and financing care for children with behavioral health needs.

Acknowledgements

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STUDY METHODS

For the *Children's Faces of Medicaid* study, analyses were conducted using data for all children under age 19 who were enrolled in Medicaid in the U.S. in 2005, 2008, and 2011. The data were derived from the Medicaid Analytic eXtract (MAX) system, a set of data files containing person-level information on Medicaid eligibility and claims-level information on service utilization and payments. The MAX data were used to:

1. Extract claims for all children in Medicaid who used BHS or psychotropic medication, regardless of how long they were enrolled (i.e., continuous Medicaid enrollment not required);
2. Summarize utilization and cost associated with BHS and psychotropic medications;
3. Illuminate the variation in BHS use by state payment and financing arrangement (i.e., fee-for-service [FFS] and managed care); and
4. Profile disease burden, including psychiatric diagnoses and comorbid physical health conditions, in the child Medicaid population.

A detailed taxonomy of BHS was developed for this study and cross-walked to Medicaid billing codes. The total number of Medicaid-enrolled children using BHS was identified. Within that group, the number of children using each individual service, within the taxonomy, was determined, along with the mean number of claims per user.

Claims were considered to be for BHS if:

1. They included a behavioral health primary diagnosis; or
2. The MAX type of service was designated as 'psychiatric services;' or
3. The service was delivered in a mental health setting, such as a community mental health center.

Services that could not be definitively defined as BHS or psychotropic medication were classified as physical health services.

Additionally, the Chronic Disability Payment System (CDPS) method was employed to investigate prevalence of chronic medical conditions among all children in Medicaid who had BHS use and at least six months of FFS enrollment. CDPS, developed at University of California San Diego, is a well-known 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. Adjustments to the CDPS model were made to allow for differences in diagnoses among children.

The analyses in this study included all children, whether they were enrolled in Medicaid FFS, a managed care organization (MCO) or managed behavioral health plan, and all claims records, whether they were FFS claims or MCO encounter records. However, mean expenditures could only be calculated for children with paid FFS claims for that service. For children without claims, MCO encounter data were used to analyze utilization but not expenditures. For that group, expenses were extrapolated based on FFS data and imputed for capitated or partially capitated states, with caveats noted. FFS expenditure data were available for 60% of the study population in the 2005 data set, 42% of the study population in 2008, and 40% of the study population in 2011. While the analysis includes all states, it should be noted that the quality and completeness of data vary, particularly in states utilizing capitated managed care.

BHS use and expense were summarized overall, and by age and aid category (TANF, foster care, or SSI/disabled). Additional analyses examined race/ethnicity and gender stratification, psychotropic medication use, children with developmental disabilities (in 2005), and children in foster care. Total and mean overall physical health expense were also calculated for children who used BHS. Expenditures for physical health services by type of service were summarized overall and by aid category. Service utilization and total Medicaid expense (physical and behavioral health) were described in further detail for those children whose behavioral health expense fell within the top 10% of total expenditures for behavioral health.

Psychiatric diagnoses were clustered into seven major categories and assigned in a hierarchical fashion for this study by child and adolescent consulting psychiatrists to allow for analysis of the distribution of diagnoses within the population, as well as to analyze service use and psychotropic medication use in the context of diagnosis.

Psychotropic medication use within the Medicaid child and adolescent population was identified using pharmacy claims. The Medicaid Rx classification system was then used to map National Drug Codes to five classes of psychotropic medications: antipsychotics, anticonvulsant medications (used in psychiatry for conditions such as bipolar disorder), antidepressants, attention deficit hyperactivity disorder (ADHD) medications, and anxiety medications. Psychotropic medication utilization and expenditures were summarized by medication type and by age, aid category, race and ethnicity, and psychiatric diagnosis of the children for whom the medications were prescribed. Variations in patterns of medication use were examined, comparing children with documented use of BHS to children who appeared to be receiving only physical health services.

Study Limitations

Limitations for this study included:

- Variations in code usage conventions and processes existed from state to state, including use of state-specific codes, so attempts to combine state claims data may over- or under-estimate specific service category use;
- Variations in reliability of state data impact the accuracy of both state level and overall utilization and expenditure results;
- MCO expenditures were imputed, based on FFS expenditures, to estimate combined total dollars; and
- All claims for youth in Medicaid with any day of enrollment were included in this study; therefore, results cannot be compared to results of studies where a year of continuous enrollment was required.

Examining Children's Behavioral Health Service Utilization and Expenditures: A Toolkit for States

States interested in analyzing how behavioral health care use and expense vary among Medicaid-insured children within their state can download a toolkit for replicating CHCS' study using their state data. Download the toolkit at: **www.chcs.org/childrens-faces-of-medicaid**.

FINDINGS

Medicaid Child Population

What the Data Show (Exhibit 1)

Overall Enrollment

The child Medicaid population grew steadily between 2005 and 2011. There were 32.4 million children in Medicaid in 2011, an 11.5% increase of over 3 million children since 2005. The U.S. child population grew less than 1% during the same period.[1] Undoubtedly, the Great Recession, which began in December 2007, contributed to the growth in Medicaid child enrollment, as may have changes in state policies due to the Affordable Care Act, which began in 2010.

Enrollment by Aid Category

Children enrolled in Medicaid in 2011 through Temporary Assistance for Needy Families (TANF) composed about 92% of the total Medicaid child population, as they did in 2005 and 2008. Children enrolled through Supplemental Security Income (SSI) represented 5% of the Medicaid child population, about the same as in 2008, but an 11% growth of almost 300,000 children since 2005, which seems consistent with national data on the growth of the child SSI/disability program.[2] Children enrolled through foster care made up 2.6% of the Medicaid child population in 2011, a 19% decrease since 2005 and a 21% decrease from 2008, with over 160,000 fewer children enrolled through foster care in 2011. This decrease seems consistent with national data indicating a 19% decrease in the foster care population between 2005 and 2011.[3]

Enrollment by Age Group and Gender

Young children, ages 0-5, constituted 45% of the Medicaid child population in 2011, a 9% increase since 2005 of over 2.6 million children. Most of this increase occurred between 2005 and 2008. A small proportion of this increase can be attributed to a roughly 2% growth in the ages 0-5 U.S. child population between 2005 and 2011. Additionally, the U.S. ages 0-5 child population grew at a faster rate than other age groups, and, within Medicaid, coverage of lawfully present immigrant children, many within this age group, increased nearly 25% among states that removed the five-year waiting period between the time immigrant families are granted immigration status and their ability to become eligible for Medicaid.[4] Children, ages 6-12, represented about a third of the Medicaid child population; while their absolute numbers grew by over 865,000 children in 2011, their proportion in the Medicaid population decreased by 2% from 2005 but increased by 6% from 2008. Adolescents, ages 13-18, who represented about 22% of the Medicaid child population in both 2008 and 2011, experienced a 12% decrease in enrollment since 2005, about 130,000 fewer adolescents than in 2005, which is somewhat explained by their declining representation in the U.S. child population over the same period. Males constituted 51% of Medicaid child enrollment in all three study years, and females 49%, consistent with their representation in the overall U.S. child population.

Enrollment by Race/Ethnicity

While White children in all three study years made up the largest percentage of the Medicaid child population at 37% in 2008 and 2011, and nearly 39% in 2005, this is well below their representation in the overall U.S. child population at 53%. Additionally, between 2005 and 2011, their representation in the Medicaid child population declined by about 5%. Black or African American (BL/AA) children experienced an even greater decrease in their representation among Medicaid children, dropping from nearly 26% of the Medicaid child population in 2005 to 23% in 2011, a 12% decrease, or over 124,000 fewer children. Despite this decrease, BL/AA children remain overrepresented in the Medicaid child population at 23% relative to their 14% representation among U.S. children in general.

American Indian or Alaska Native (AI/AN) children and Native Hawaiian or Pacific Islander (NH/PI) children also experienced decreases in Medicaid enrollment between 2005 and 2011. About 47,000 fewer AI/AN children enrolled in Medicaid in 2011 compared to 2005 (a 20% decrease), and a similar 20% decrease occurred between 2008 and 2011, over 66,000 fewer children. Even with these decreases, AI/AN children remain slightly overrepresented in the Medicaid child population at 1.2% compared to their representation in the U.S. child population at about 0.9%. NH/PI children also experienced decreased Medicaid enrollment in 2011, with nearly

12,000 fewer children enrolled compared to 2005 (a 17% decrease) and an even larger 29% decrease from 2008, over 42,000 fewer children. NH/PI children are slightly underrepresented in the Medicaid child population at 0.5% compared to their representation in the U.S. child population at about 1%.

Hispanic/Latino children and Hispanic/Latino children of more than one race experienced increases in Medicaid child enrollment between 2005 and 2011. More than 835,000 additional Hispanic/Latino children enrolled in Medicaid in 2011 compared to 2005 (a 1.4% increase). More than 880,000 additional Hispanic/Latino children of more than one race enrolled in 2011 compared to 2005 (an 83% increase). Taken together, these two populations represented nearly 28% of the overall Medicaid child population in 2011, compared to their representation in the overall U.S. child population at 26%.

Multiracial children (a distinct population in the U.S. Census data from Hispanic/Latino children of more than one race) are a relatively small segment of the Medicaid child population, but nonetheless experienced nearly a 133% increase in their Medicaid enrollment between 2005 and 2011. Even with this increase, they are underrepresented in the Medicaid population at 0.7% compared to their representation among U.S. children at 2.9%. For contextual purposes, the number of people of all ages who identified themselves as Multiracial — most commonly as black and white — increased 134% between 2000 and 2011, with a nearly 50% increase in the number of Multiracial children.[5]

While Asian children also increased their numbers among Medicaid children by nearly 135,000 children, a 20% increase, their representation in the Medicaid child population at about 2% is well under their representation in the U.S. child population at 4%.

Highlights and Implications of the Data

- More children enrolled in Medicaid in 2011;
- More young children, ages 0-5, enrolled;
- More children on SSI/disability enrolled, though still a small percentage;
- Fewer children enrolled through foster care, reflecting the decrease in the foster care population in general;
- Fewer White children enrolled, though still the largest cohort; they remain underrepresented compared to their percentage in the U.S. child population;
- There was a surge in enrollment of Hispanic/Latino children, now the second largest cohort after White children in Medicaid;
- There was a marked increase in enrollment of Multiracial children, though still a small segment of the overall Medicaid child population;
- More Asian children enrolled but remain underrepresented compared to their percentage in the U.S. child population;
- Fewer BL/AA children enrolled, though still overrepresented in Medicaid; and
- Fewer AI/AN and NH/PI children enrolled, though AI/AN children are still slightly overrepresented compared to their percentage in the U.S. child population; NH/PI children are slightly underrepresented.

The growing diversity of the Medicaid child population, particularly among Hispanic/Latino children, provides opportunity for addressing health disparities and highlights the need for increasing culturally and linguistically relevant outreach, engagement, and service delivery strategies. The increase in the ages 0-5 population creates opportunity for more early intervention and dyad approaches focused on parents/caregivers and young children. The sizeable overrepresentation of BL/AA children in Medicaid, while narrowing, (as well as the relative underrepresentation of White children), speaks to larger issues of poverty and inequality that remain of deep concern.

Exhibit 1. Characteristics of Children in Medicaid, 2005, 2008, and 2011

Demographic	2005		2008		2011	
Age Group						
0-5 years	41.3%	12,001,451	46.3%	14,128,316	45.2%	14,625,040
6-12 years	34.0%	9,889,507	31.3%	9,559,021	33.2%	10,742,593
13-18 years	24.6%	7,159,347	22.3%	6,816,277	21.7%	7,016,623
Gender						
Female	48.9%	14,202,259	48.7%	14,860,326	48.7%	15,764,284
Male	51.0%	14,816,976	51.0%	15,549,420	51.1%	16,544,410
Unknown	N/A	N/A	0.3%	93,868	0.2%	75,562
Race and Ethnicity						
White	38.8%	11,271,574	36.8%	11,210,800	37.0%	11,989,616
Black or African American	25.9%	7,537,925	24.9%	7,586,425	22.8%	7,399,372
American Indian or Alaska Native	1.5%	448,234	1.5%	455,040	1.2%	388,749
Asian	2.2%	644,744	2.2%	678,467	2.4%	774,040
Hispanic or Latino	22.1%	6,416,067	22.7%	6,932,396	22.4%	7,255,224
Native Hawaiian or Pacific Islander	0.6%	185,598	0.7%	205,304	0.5%	162,835
Hispanic or Latino + one or more races	2.9%	846,083	4.0%	1,231,961	5.3%	1,723,148
More than one race	0.3%	74,093	0.4%	109,000	0.7%	218,671
Unknown	5.6%	1,628,987	6.9%	2,094,221	7.6%	2,472,601
Aid Category						
TANF	92.3%	26,812,742	91.6%	27,947,758	92.4%	29,932,214
Foster care	3.2%	919,590	3.3%	1,005,542	2.6%	844,963
SSI/disabled	4.5%	1,317,973	5.1%	1,550,314	5.0%	1,607,079
Total Population	**100%**	**29,050,305**	**100%**	**30,503,614**	**100%**	**32,384,256**

Medicaid Child Behavioral Health Penetration Rates

What the Data Show

Overall Penetration Rates (Exhibit 2 and Chart 1)

The percentage of children in Medicaid who used behavioral health care — defined as use of either BHS and/or psychotropic medications — increased from 9.6% in 2005 to 11.2% in 2011, a 17% increase, with most of that increase occurring between 2008 and 2011. Of the 32.4 million children in Medicaid in 2011, 3.6 million used behavioral health care. The increased penetration rate was driven by a 19% increase in the percentage using BHS and a 16% increase in the percentage of children using psychotropic medication. In 2011, 8% of children in Medicaid — over 2.5 million children — used BHS, up from 6.7% in 2005. In 2011, 6.7% of children in Medicaid used psychotropic medication — over 2 million children — up from 5.8% in 2005. While there was a slight increase in the use of services among children receiving psychotropic medications in 2011, close to half of children receiving psychotropic medications in 2011 did not receive accompanying behavioral health treatment, as was the case in 2005.

Chart 1. Total Population of Children in Medicaid Compared to the Total Children Receiving Behavioral Health Care, 2005, 2008, and 2011

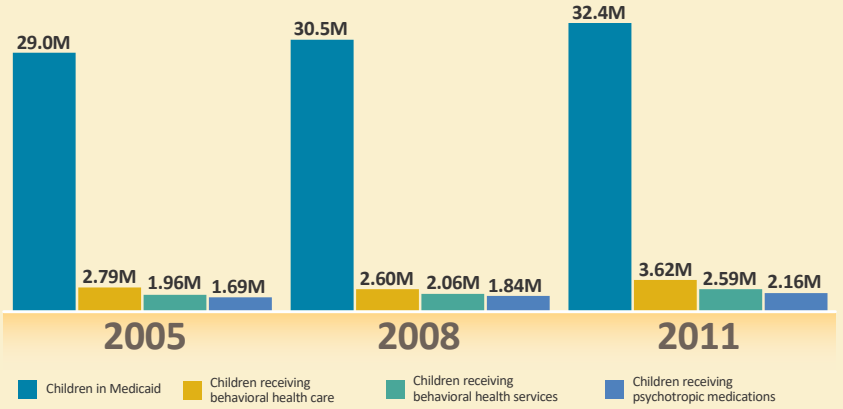


Exhibit 2. Medicaid Child Behavioral Health Penetration Rates, 2005, 2008, and 2011

Medicaid Child Behavioral Health Care Type	2005		2008		2011	
	N (% of Total)	Rate	N (% of Total)	Rate	N (% of Total)	Rate
All children receiving BHS						
Recipients of BHS only (no psychotropic medication use)	1,101,532 (56.2%)	3.8%	1,159,062 (56.3%)	3.8%	1,460,095 (56.3%)	4.5%
Recipients of BHS and psychotropic medications	857,376 (43.8%)	2.9%	900,220 (43.7%)	3.0%	1,134,722 (43.7%	3.5%
Total children receiving BHS	**1,958,908 (100%)**	**6.7%**	**2,059,282 (100%)**	**6.8%**	**2,594,817 (100%)**	**8.0%**
All children receiving psychotropic medications (includes mutually exclusive groups)						
Recipients of psychotropic medications and BHS	857,376 (50.8%)	2.9%	900,220 (48.8%)	3.0%	1,134,722 (52.6%)	3.5%
Recipients of psychotropic medications only (no BHS use)	829,011 (49.2%)	2.9%	943,514 (51.2%)	3.0%	1,022,323 (47.4%)	3.2%
Total children receiving psychotropic medications	**1,686,387 (100%)**	**5.8%**	**1,843,734**	**6.0%**	**2,157,045**	**6.7%**
All children receiving behavioral health care (children with BHS use and/or psychotropic medication use)						
Recipients of BHS (includes children with BHS use only and children with BHS use who also received psychotropic medications)	1,958,908 (70.3%)	6.7%	2,059,282 (68.6%)	6.8%	2,594,817	8.0%
Recipients of psychotropic medications only (no BHS use)	829,011 (29.7%)	2.9%	943,514 (31.4%)	3.1%	1,022,323	3.2%
Total children receiving behavioral health care	**2,787,919 (100%)**	**9.6%**	**3,002,796**	**9.8%**	**3,617,140**	**11.2%**
Total number of U.S. children enrolled in Medicaid	**29,050,305**	**100%**	**30,503,614 (100%)**	**100%**	**32,384,256**	**100%**

Penetration Rates for BHS Use by Aid Category (Exhibit 3)

Penetration rates increased for all aid categories of children between 2005 and 2011. TANF-enrolled children, while still using BHS at a rate far below their representation in the Medicaid child population, nonetheless experienced a 29% increase in their rate of use, going from a 4.9% penetration rate in 2005 to a 6.3% rate in 2011. Penetration rates for the foster care population, after decreasing 14% between 2005 and 2008, increased 23% between 2008 and 2011, with 33.9% of this population using services in 2011, which is slightly higher than the 32% rate of use in 2005. Children in foster care consistently have the highest rate of service use of any aid category of children across all three study years. Children on SSI/disability have the second highest penetration rate. After experiencing an 8% decrease in rate of use between 2005 and 2008, rates for children on SSI/disability increased 12% in 2011, with 27.2% of this population using BHS in 2011, which is slightly higher than the 26.4% rate of use in 2005. While children in foster care and children on SSI/disability use BHS at rates considerably higher than their representation in the overall Medicaid child population (2.6% and 5%, respectively), prevalence studies suggest that these rates remain low given the need for services. For example, it has been estimated that 50-80% of the child welfare population has a need for BHS.[6, 7] It has been estimated that, conservatively, over a third of children with disabilities have a need for mental health services, with low income and minority children having higher rates of need and less likelihood of accessing services.[8]

Penetration Rates for BHS Use by Age Group (Exhibit 3)

Penetration rates increased for all age groups between 2005 and 2011. Young children, ages 0-5, increased their rate of use by 67%, going from a 1.8% penetration rate in 2005 to 3% in 2011. Children, ages 6-12, increased their rate of use by 24%, going from 8.8% in 2005 to 10.9% in 2011. Adolescents, ages 13-18, continued to have the highest rate of use at 14%, a 15% increase from the 12.2% rate in 2005.

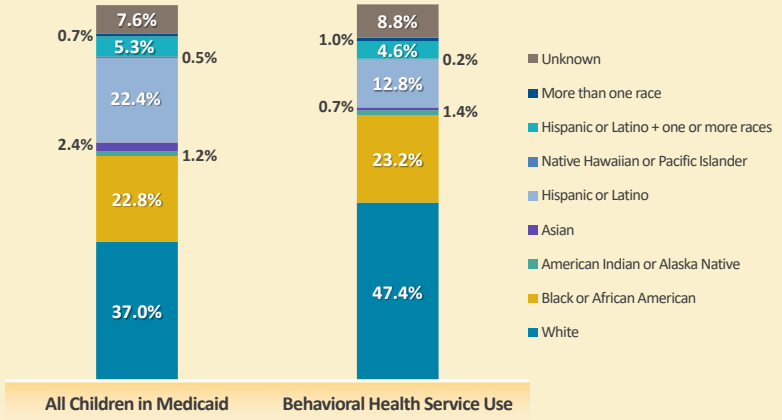
Penetration Rates for BHS Use by Gender (Exhibit 3)

Penetration rates increased for both males and females, 16% and 21% increases respectively from 2008. While females made gains in access to services, their rate of service use at 6.8% remains significantly lower than that of males at 9.2%.

Penetration Rates for BHS Use by Race/Ethnicity (Exhibit 3 and Chart 2)

Penetration rates increased for all racial and ethnic groups of children between 2005 and 2011, except for NH/PI children, whose rate fell 6%, from 3.1% in 2005 to 2.9% in 2011. This rate of use is well below the 8% penetration rate for all children in Medicaid.

Chart 2. Medicaid Enrollment and Behavioral Health Service Use by Race/Ethnicity, 2011



Asian children, while experiencing a 28% growth in rate of use between 2005 and 2011, continued to have the lowest penetration rate at 2.3% (up from 1.8% in 2005). Historically, White children have had higher rates of service use than all other racial and ethnic groups of children. This remained true in 2011, except for Multiracial children, who had the highest rate of use at 11.3%, compared to the rate for White children of 10.3%. (Note, the U.S. Census Bureau indicates that Multiracial individuals predominantly identify as black and white). Penetration rates for Multiracial children increased by 57% between 2005 and 2011. Rates increased for White children by 14%. While Hispanic/Latino children and Hispanic/Latino children of more than one race experienced 24% and 35% gains in service use rates between 2005 and 2011, respectively, their rates of use in 2011, at 4.6% and 6.9% respectively, are well below the 8% penetration rate for all children in Medicaid. Penetration rates for AI/AN children increased 47%, from 6.4% in 2005 to 9.4% in 2011. BL/AA children

experienced a 23% increase in rate of use, going from 6.6% in 2005 to 8.1% in 2011. Although some earlier studies have found disproportionately low utilization of BHS by BL/AA children compared to children in general in Medicaid, this analysis did not find this to be the case in any of the study years; BL/AA children used services at a rate consistent with children in general. Several populations used services in 2011 at rates that were higher than that of BL/AA children or children in general, including White children, Multiracial children, and AI/AN children; and several populations used services at rates that were lower than BL/AA children or children in general, including Asian, NH/PI, and Hispanic/Latino children.

Exhibit 3. Penetration Rates by Demographics and Aid Category 2005, 2008, and 2011

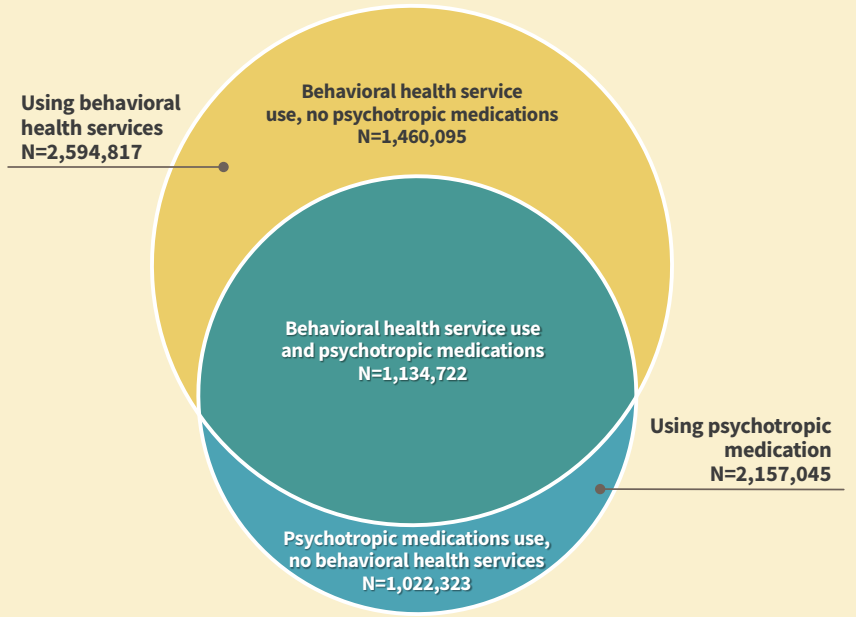
Children Using BHS	2005		2008		2011	
	%	N	%	N	%	N
Age Group						
0-5 years	1.8%	217,584	2.4%	342,993	3.0%	441,311
6-12 years	8.8%	869,994	9.3%	892,871	10.9%	1,171,232
13-18 years	12.2%	871,330	12.1%	823,418	14.0%	982,274
Gender						
Female	5.5%	776,685	5.6%	837,619	6.8%	1,072,386
Male	8.0%	1,181,997	7.9%	1,221,562	9.2%	1,522,127
Unknown	N/A	N/A	0.1%	101	0.4%	304
Race and Ethnicity						
White	9.0%	1,015,126	9.1%	1,014,816	10.3%	1,228,951
Black or African American	6.6%	496,426	7.1%	541,080	8.1%	602,129
American Indian or Alaska Native	6.4%	28,870	7.6%	34,460	9.4%	36,460
Asian	1.8%	11,458	1.9%	13,075	2.3%	17,983
Hispanic or Latino	3.7%	234,398	3.4%	232,495	4.6%	331,780
Native Hawaiian or Pacific Islander	3.1%	5,702	1.6%	3,275	2.9%	4,790
Hispanic or Latino + one or more races	5.1%	43,521	5.2%	63,480	6.9%	119,048
More than one race	7.2%	5,366	8.9%	9,747	11.3%	24,775
Unknown	7.2%	118,041	7.0%	146,854	9.3%	228,901
Aid Category						
TANF	4.9%	1,316,635	5.0%	1,404,035	6.3%	1,871,430
Foster care	32.0%	293,885	27.6%	277,992	33.9%	286,845
SSI/disabled	26.4%	348,338	24.3%	377,255	27.2%	436,542

Highlights and Implications of the Data

- The penetration rate for use of any behavioral health care (services and/or psychotropic medications) increased to 11.2% in 2011, a 17% increase from 2005. The percentage of children who received services (not just psychotropic medications) increased to 8%, a 19% increase from 2005. The percentage of children receiving psychotropic medication (with or without services) increased to 6.7% in 2011, a 16% increase from 2005, and the percentage of children receiving only psychotropic medication (no services) increased to 3.2%, a 10% increase from 2005.
- Service use rates increased for all aid categories of children, both males and females, all age groups, and all racial/ethnic groups, except for NH/PI children, whose rate of use decreased. While it is encouraging that the rate of service use has increased after remaining largely stagnant over a decade, the 8% service use rate remains low given prevalence studies indicating that 20% of children have a need for BHS. Rates of service use are disproportionately low for: females; TANF-enrolled children; young children, ages 0-5; NH/PI, Asian, and Hispanic/Latino children.
- While historically White children have had higher rates of service use than any other racial/ethnic group, in 2011, for the first time, this was not the case. Multiracial children had the highest rate of service use at 11.3%, compared to the 8% rate for all children and a 10.3% rate for White children.
- Children in foster care continued to have the highest rate of use of any aid category of children, at nearly 34%; however, this rate also is low compared to prevalence estimates that 50-80% of this population experiences significant behavioral health issues.
- The increased rate of use of psychotropic medications is concerning, given issues raised nationally about potential overuse of these medications with children. Also concerning is that close to half of children receiving psychotropic medications do not receive accompanying BHS (**chart 3**).

While still well below prevalence rates, the increased penetration rate for use of BHS is encouraging and may be due to several factors. Federal and state health-reform initiatives may have had an impact: Medicaid managed care, for example, which has been a core component of Medicaid reform in many states, has been found to increase basic access to BHS.[9] Certain federal discretionary grant programs, such as the Substance Abuse and Mental Health Services Administration's (SAMHSA) system of care grants, also have been shown to increase access.[10] The jump in the penetration rate between 2005 and 2011 is relatively modest; it will be important to continue to track penetration rates as federal and state health reform initiatives change over time. The increased rate of psychotropic medication use indicates the need for continued scrutiny of prescribing practices for children. There also is a need to examine more closely the sizeable population of children on psychotropic medications who are not receiving accompanying BHS, to ensure access to appropriate care.

Chart 3. Children in Medicaid Using Behavioral Health Care, 2011



With research indicating the effectiveness of earlier intervention to prevent behavioral health issues later in adolescence, and the fact that young children make up nearly half of the Medicaid child population, the particularly low rates of service use among young children point to the considerable opportunity for increasing their access to BHS in Medicaid. Similarly, disproportionately low rates of service use

among certain racial and ethnic groups — Hispanic/Latino, Asian, and NH/PI children in particular — argue for more tailored outreach, engagement, and culturally specific approaches. Female children persistently have had lower rates of service use than males, although studies have documented a comparable, and in some cases, greater need for services: for example, females are more likely to have anxiety, mood and eating disorders, and a higher rate of suicide attempts than males.[11, 12] The data continue to point to the importance of outreach, engagement, and service strategies more specifically geared to girls.

Composition of the Child Population Using Behavioral Health Services

What the Data Show (Exhibit 4)

Age and Gender Characteristics

Young children, ages 0-5, have been steadily increasing their numbers in the population using BHS, reflecting both their increased enrollment in Medicaid and increased access to services. However, while they experienced a 53% increase from 2005 in their representation among children using BHS, they are still considerably underrepresented at 17% of the population using services compared to their 45% representation in the overall child Medicaid population. Children, ages 6-12, have constituted about 45% of the population using BHS in all three study years, which is an overrepresentation compared to their 33% representation in the overall Medicaid child population. Representation of adolescents, ages 13-18, in the population using services has steadily declined since 2005; this group constituted 37.9% of the population using services in 2011 compared to 44.5% in 2005, a 15% decrease, which is mainly attributable to their decreasing percentage in the overall U.S. child population and in Medicaid enrollment. Even with this decrease, adolescents are overrepresented at 37.9% in the population using services compared to their 22% representation in the Medicaid child population.

In all three study years, males were more likely to use BHS than females, constituting 58.7% of the population using services in 2011 compared to their 51% share of the overall Medicaid child population. Between 2005 and 2011, females slightly increased their representation among those using services, going from 39.6% to 41.3%, a 4% increase, but still below their representation in the Medicaid child population at 48.7%.

Race and Ethnicity Characteristics

Several racial/ethnic cohorts of children experienced decreases in representation among children using BHS between 2005 and 2011, while others experienced increases, reflecting demographic changes in the overall Medicaid child population and changes in service access. White children experienced an 8% decrease in representation among the population using services; however, as in prior study years, they disproportionately used BHS in 2011 relative to their representation in the Medicaid child population and relative to most other racial/ethnic groups. White children made up 47.4% of those using BHS in 2011 but only 37% of the Medicaid child population in that year. AI/AN children also experienced a decrease of 7% in representation among those using services, constituting 1.4% of those using services, which is still slightly higher than their 1.2% representation in the overall Medicaid child population. BL/AA children experienced an 8% decrease in representation among children using BHS; however, they continued to use services in proportion to their representation in the Medicaid child population. BL/AA children constituted 23% of children using BHS in 2011 and 23% of children in Medicaid in that year. NH/PI children experienced a 33% decrease in their representation among children using BHS between 2005 and 2011, constituting 0.2% of children using services, well below their representation in the Medicaid child population at 0.5%. Asian, Hispanic/Latino, and Hispanic/Latino children of more than one race experienced increases in their use of BHS between 2005 and 2011; however, even with these increases, their representation among those using services remained disproportionately low compared to their enrollment in Medicaid. Asian children were 0.7% of the population using services in 2011 but 2.4% of the Medicaid child population. Hispanic/Latino children were 12.8% of children using services in 2011 but 22.4% of Medicaid child enrollment. Hispanic/Latino children of more than one race made up 4.6% of children using services in 2011 but 5.3% of the Medicaid child population. Multiracial children, while a small segment of the Medicaid child population, experienced a 233% increase in their representation among those using services, constituting 1% of the population using services, higher than their 0.7 % representation in Medicaid.

Aid Category Characteristics

Between 2005 and 2011, TANF-enrolled children experienced a 7% increase among children using BHS, constituting 72% of children using services in 2011; however, even with this increase, they remained well underrepresented relative to their enrollment in Medicaid, where they were about 92% of the Medicaid child population. Relative to the TANF population, children in foster care and children on SSI/disability use services to a far greater extent than their representation in the Medicaid child population, even though they experienced decreased representation between 2005 and 2011 within the population using services. Children in foster care constituted 11% of the child population using BHS in 2011, down from 15% in 2005; however, they represented only 2.6% of the Medicaid child population in 2011, down

from 3.2% in 2005. The 26% decrease between 2005 and 2011 of children in foster care among children using services is due largely to declining representation of children in foster care in the overall Medicaid child population, which, in turn, is consistent with declining numbers of children in foster care in general. Children on SSI/disability experienced a 6% decrease in their representation among those using services between 2005 and 2011, composing 16.8% of children using BHS in 2011, compared to their 5% representation in the Medicaid child population.

Exhibit 4. Characteristics of Children Using BHS by Aid Category and Demographics, 2005, 2008, and 2011

Demographic and Aid Category	Total Medicaid Children 100%, N= 29,0050,305		Medicaid Children Using BHS* 100%, N=1,958,908		Total Medicaid Children 100%, N= 30,503,614		Medicaid Children Using BHS* 100%, N= 2,059,282		Total Medicaid Children 100%, N= 32,384,256		Medicaid Children Using BHS* 100%, N= 2,594,817	
	2005				2008				2011			
	%	N	%	N	%	N	%	N	%	N	%	N
Age Group												
0-5 years	41.3%	12,001,451	11.1%	217,584	46.3%	14,128,316	16.7%	342,993	45.2%	14,625,040	17.0%	441,311
6-12 years	34.0%	9,889,507	44.4%	869,994	31.3%	9,559,021	43.4%	892,871	33.2%	10,742,593	45.1%	1,171,232
13-18 years	24.6%	7,159,347	44.5%	871,330	22.3%	6,816,277	40.0%	823,418	21.7%	7,016,623	37.9%	982,274
Gender												
Female	48.9%	14,202,259	39.6%	776,685	48.7%	14,860,326	40.7%	837,619	48.7%	15,764,284	41.3%	1,072,385
Male	51.0%	14,816,976	60.3%	1,181,997	51.0%	15,549,420	59.3%	1,221,562	51.1%	16,544,410	58.7%	1,522,127
Race and Ethnicity												
White	38.8%	11,271,574	51.8%	1,015,126	36.8%	11,210,800	49.3%	1,014,816	37.0%	11,989,616	47.4%	1,228,951
Black or African American	25.9%	7,537,925	25.3%	496,426	24.9%	7,586,425	26.3%	541,080	22.8%	7,399,372	23.2%	602,129
American Indian or Alaska Native	1.5%	448,234	1.5%	28,870	1.5%	455,040	1.7%	34,460	1.2%	388,749	1.4%	36,460
Asian	2.2%	644,744	0.6%	11,458	2.2%	678,467	0.6%	13,075	2.4%	774,040	0.7%	17,983
Hispanic or Latino	22.1%	6,413,067	12.0%	234,398	22.7%	6,932,396	11.3%	232,495	22.4%	7,255,224	12.8%	331,780
Native Hawaiian or Pacific Islander	0.6%	185,598	0.3%	5,702	0.7%	205,304	0.2%	3,275	0.5%	162,835	0.2%	4,790
Hispanic or Latino + one or more races	2.9%	846,083	2.2%	43,521	4.0%	1,231,961	3.1%	63,480	5.3%	1,723,148	4.6%	119,048
More than one race	0.3%	74,093	0.3%	5,366	0.4%	109,000	0.5%	9,747	0.7%	218,671	1.0%	24,775
Unknown	5.6%	1,628,987	6.0	118,041	6.9%	2,094,221	7.1%	146,854	7.6%	2,472,601	8.8%	228,901
Aid Category												
TANF	92.3%	26,812,742	67.2%	1,316,635	91.6%	27,947,758	68.2%	1,404,035	92.4%	29,932,214	72.1%	1,871,430
Foster care	3.2%	919,590	15.0%	293,885	3.3%	1,005,542	13.5%	277,992	2.6%	844,963	11.1%	286,845
SSI/disabled	4.5%	1,317,973	17.8%	348,338	5.1%	1,550,314	18.3%	377,255	5.0%	1,607.079	16.8%	436,542

** Includes all children using BHS with or without psychotropic medications.*

Highlights and Implications of the Data

- Children, ages 6-12, made up 45% — the largest age segment — of children using BHS in 2011. Adolescents, ages 13-18, were the second largest cohort at 38% of the population, smaller than their 45% representation in 2005, but reflective of their smaller representation in the overall Medicaid child population between 2005 and 2011. In contrast, young children, ages 0-5, increased their representation among those using services by over 50% between 2005 and 2011, indicative both of their growing numbers in the Medicaid child population and increased access to services. Nonetheless, young children remained the smallest cohort in the population using services, at 17% in 2011.
- Males continued to make up a disproportionately larger share — nearly 59% — of the population using services relative to their representation in the overall Medicaid child population at 51% and relative to females. Girls increased their representation slightly from 2005-2011 among those using services, representing 41% of this population in 2011, but they remain underrepresented compared to their 49% share of the Medicaid child population.
- Although White children experienced decreased representation among those using BHS between 2005 and 2011, they continued to represent the largest racial or ethnic group of children using services, comprising over 47% of the population in 2011. This is disproportionately high compared to their 37% representation among Medicaid children in general.
- Representation among those using services also decreased between 2005 and 2011 for BL/AA, AI/AN, and NH/PI children. Even with these decreases, however, BL/AA and AI/AN children used BHS in proportion to or slightly higher than their representation in the overall Medicaid child population. NH/PI children, however, who experienced a notable 67% decrease among those using services between 2005 and 2011, were significantly underrepresented among those using services compared to their proportion in the Medicaid child population.
- Asian, Hispanic/Latino, Hispanic/Latino children of more than one race, and Multiracial children all experienced increases in representation among children using BHS between 2005 and 2011. However, even with these gains, Asian, Hispanic/Latino, and Hispanic/Latino children of more than one race were underrepresented in the population using services compared to their enrollment among Medicaid children in general. In contrast, Multiracial children, who increased their representation among those using services by over 200% between 2005 and 2011, were somewhat overrepresented at 1% of the service-using population, compared to their 0.7% share of the Medicaid child population.
- Children on TANF, who are 92% of the Medicaid child population, are understandably also the largest aid category among those using services, constituting 72% of this population, which represents an increase in representation among those using services between 2005 and 2011. However, even with the increase, their representation among those using services was disproportionately low, given their representation in the Medicaid child population.
- Both the foster care and SSI/disabled child populations experienced decreased representation among those using services between 2005 and 2011; however, even with these decreases, both populations represented much larger segments of the population using BHS — 11% for foster care and nearly 17% for SSI/disabled — than their overall representation in the Medicaid child population at 2.6% for children in foster care and 5% for children on SSI/disability.

Some of the changes in the makeup of the population using BHS are due to changes in Medicaid enrollment in general. The demographics of the Medicaid child population have shifted between 2005 and 2011, with fewer White, BL/AA, AI/AN, NH/PI children, fewer adolescents, and fewer children in foster care enrolled, and greater enrollment of Hispanic/Latino, Asian, Multiracial, and young children, ages 0-5. Some of the changes, however, are due to persistently low rates of service use for certain populations, namely, females, children enrolled through TANF, young children, ages 0-5, NH/PI, Asian, and Hispanic/Latino children.

Rates of Psychiatric Diagnoses among Children Using Behavioral Health Services

What the Data Show

Overall Rates (Exhibit 5)

In all three study years, ADHD, Conduct Disorder, and Mood Disorder were the top three diagnoses received by children using BHS. Over a third of children who used services received a diagnosis of ADHD in all three study years, with a 9% increase between 2005 and 2011 in the percentage of those receiving this diagnosis. In 2008 and 2011, the next most frequently received diagnosis was Conduct Disorder, received by slightly under a third of children. Conduct Disorder was not used as frequently in 2005 (although still a top-three diagnosis), when only 14% of children received this diagnosis. Slightly under a third of children received a diagnosis of Mood Disorder in 2008 and 2011. Again, a much smaller percentage of children (16%) received this diagnosis in 2005, although this was still a top-three diagnosis. Anxiety was diagnosed in 21% of children in 2011, a 55% increase from 2005 and a 22% increase from 2008. About 5% of children in both 2008 and 2011 received a diagnosis of Developmental Disability, up from 3.6% in 2005. Slightly under 3% of children received a diagnosis of psychosis in all three study years. Roughly 5-6% of children received a diagnosis of PTSD in 2008 and 2011, and 6% of youth received a substance use disorder (SUD) diagnosis in each of these years. (Note, PTSD and SUD diagnosis data were not captured in 2005). A comparatively high percentage of children who received BHS had no documented diagnosis in 2005 (39%); this percentage decreased steadily over time, with 12% of children having no diagnosis in 2011.

Exhibit 5. Rates of Psychiatric Diagnoses among Children in Medicaid Using BHS, 2005, 2008, and 2011

Diagnosis	Medicaid Children Using BHS 100%, N=1,958,908		Medicaid Children Using BHS 100%, N= 2,059,282		Medicaid Children Using BHS 100%, N=2,594,817	
	2005		2008		2011	
	%*	N	%*	N	%*	N
ADHD	33.4%	654,863	34.5%	709,512	36.4%	944,452
Conduct Disorder	13.9%	272,288	31.3%	644,288	32.5%	843,041
Mood Disorder	16.0%	312,642	30.0%	617,080	31.9%	828,153
Anxiety	13.8%	270.721	17.5%	360,490	21.4%	554,460
PTSD**	N/A	N/A	5.0%	103.343	5.9%	152,991
Developmental Disability	3.6%	69,541	4.8%	98,794	5.3%	138,298
Psychosis	2.6%	51.323	2.6%	53,010	2.7%	70,951
SUD Diagnosis**	N/A	N/A	6.0%	122,696	6.1%	157,764
Other Diagnosis	0.8%	16,259	4.3%	89,120	4.9%	125,980
No Diagnosis	39.1%	766,525	15.6%	322,196	12.3%	318,292

**Does not sum to 100% because children may receive more than one diagnosis.*

*** PTSD and SUD diagnosis data were not collected for 2005.*

Rates of Psychiatric Diagnoses among Children in Medicaid Using BHS by Age Group (Exhibit 5a)

Between 2005 and 2011, rates of every type of psychiatric diagnosis increased for all age groups of children, except for Psychosis (which went down for younger children) and SUD (which was not captured in 2005). The percent of young children, ages 0-5, receiving specific diagnoses increased as follows:

- Conduct Disorder increased nearly threefold (from 12.6% of children who used BHS receiving this diagnosis in 2005 to 33.1% in 2011);
- ADHD increased by over a third (from 19% to 25.9%);
- Mood Disorder increased fivefold (from 2.7% to 13.4%);
- Anxiety nearly doubled (from 8% to 14.9%); and
- Developmental Disability increased 33% (from 5.8% to 7.7%).

The percentage of children, ages 6-12, receiving specific diagnoses increased as follows between 2005 and 2011:

- Conduct Disorder nearly tripled (from 12.3% to 34%);
- Mood Disorder increased by 150% (from 10.9% to 27.3%);
- Anxiety increased by 67% (from 12.8% to 21.5%);
- ADHD increased 8% (from 43.9% to 47.6%); and
- Developmental Disability increased 47% (from 3.8% to 5.6%).

The percentage of adolescents, ages 13-18, receiving specific diagnoses increased as follows between 2005 and 2011:

- Conduct Disorder increased fourfold (from 5.8% to 27.8%);
- Mood Disorder increased 89% (from 24.2% to 45.8%);
- Anxiety increased 49% (from 16.2% to 24.1%);
- Psychosis increased 24% (from 3.8% to 4.7%);
- ADHD increased 5% (from 26.6% to 27.8%); and
- Developmental Disability increased 30% (from 3% to 3.9%).

It should be noted that the percent of all age groups of children who received BHS and No Diagnosis decreased considerably between 2005 and 2011, which helps to explain much of the increased rates of diagnoses across age groups noted above. In 2005, over 60% of young children, ages 0-5, received No Diagnosis; in 2011, this fell to 24.8%. Similarly, 36.3% of children, ages 6-12, received No Diagnosis in 2005, which fell to 7.6% in 2011. Nearly 37% of adolescents, ages 13-18, received No Diagnosis in 2005, which fell to 12.2% in 2011.

In 2005, the top three diagnoses for young children, ages 0-5, were, in order: ADHD, Conduct Disorder, and Anxiety. In 2011, the order shifted to: Conduct Disorder, ADHD, and Anxiety. In both 2005 and 2011, young children, ages 0-5, were more likely than other age groups to receive a diagnosis of Developmental Disability or No Diagnosis. They were about equally as likely to receive a diagnosis of Conduct Disorder as children, ages 6-12, and both cohorts of younger children were more likely to receive this diagnosis than adolescents, ages 13-18. Young children, ages 0-5, were less likely than other age groups to receive diagnoses of Mood Disorder, Anxiety, Psychosis, and, in 2011, PTSD and SUD (which were not captured in 2005). In 2005, the top three diagnoses for children, ages 6-12, were in order: ADHD, Anxiety, and Conduct Disorder. In 2011, the top three were: ADHD, Conduct Disorder, and Mood Disorder. Children, ages 6-12, were more likely than other age groups to receive a diagnosis of ADHD. In 2005, the top three diagnoses for adolescents, ages 13-18, were: ADHD, Mood Disorder, and Anxiety. In 2011, the top three were: Mood Disorder, Conduct Disorder, and ADHD. Adolescents, ages 13-18, were more likely than other children to receive diagnoses of Mood Disorder, Anxiety, PTSD, Psychosis, and SUD. They were less likely to receive a diagnosis of Developmental Disability. As referenced above, young children, ages 0-5, were more likely than other children to receive No Diagnosis, followed by adolescents and then children, ages 6-12.

Exhibit 5a. Rate of Psychiatric Diagnoses among Children in Medicaid Using BHS, by Age Group, 2005 and 2011*

Psychiatric Diagnosis Type	2005				2011			
	N % of Children**	Ages 0 – 5 T=217,584	Ages 6 – 12 T=869,994	Ages 13 – 18 T=871,330	N/% of Children**	Ages 0 – 5 T=441,311	Ages 6 – 12 T=1,171,232	Ages 13 – 18 T=982,274
ADHD	654,772 33.4%	41,246 19.0%	381,782 43.9%	231,744 26.6%	944,452 36.4%	113,813 25.9%	557,185 47.6%	273,454 27.8%
Conduct Disorder	272,288 13.9%	27,488 12.6%	106,830 12.3%	137,917 5.8%	843,041 32.5%	145,916 33.1%	398,623 34.0%	298,502 30.4%
Mood Disorder	312,642 16.0%	7,356 2.7%	94,782 10.9%	210,474 24.2%	828,153 31.9%	59,072 13.4%	319,520 27.3%	449,561 45.8%
Anxiety	270.721 13.8%	17,488 8.0%	111,686 12.8%	141,537 16.2%	554,460 21.4%	65,798 14.9%	251,929 21.5%	236,833 24.1%
PTSD***	N/A	N/A	N/A	N/A	152,991 5.9%	17,052 3.9%	69,455 5.9%	66,484 6.8%
Developmental Disability	69,541 3.6%	12,520 5.8%	33,485 3.8%	23,631 3.0%	138,298 5.3%	33,984 7.7%	65,973 5.6%	38,341 3.9%
Psychosis	51.323 2.6%	1,825 0.8%	16,809 1.9%	32,753 3.8%	70,951 2.7%	2,416 0.5%	21,621 1.8%	46,914 4.7%
SUD Diagnosis***	N/A	N/A	N/A	N/A	157,764 6.1%	1,528 0.3%	6,996 0.6%	149,240 15.2%
Other Diagnosis	16,259 0.8%	1,186 0.5%	6,584 0.8%	8,394 1.0%	125,980 4.9%	30,701 7.0%	49,366 4.2%	45,913 4.7%
No Diagnosis	766,525 39.1%	131,379 60.4%	315,471 36.3%	319,522 36.7%	318,292 12.3%	109,639 24.8%	89,155 7.6%	119,498 12.2%

**Data not available for 2008.*

***Does not sum to 100% because children may receive more than one diagnosis.*

**** PTSD and SUD diagnosis data were not collected for 2005.*

Rates of Psychiatric Diagnoses among Children in Medicaid Using BHS by Gender (Exhibit 5b)

In 2011, the top three diagnoses received by males were: ADHD, with 44% of boys who used BHS receiving this diagnosis, Conduct Disorder (35.3%), and Mood Disorder (27.5%). The top three diagnoses received by females using BHS in 2011 were: Mood Disorder (32.5%), Conduct Disorder (28.5%), and Anxiety (26.9%). Males were more likely than females to receive diagnoses of: ADHD (44% of males, 25.7% of females); Conduct Disorder (35.3% of males; 28.5% of females); Developmental Disability (7.1% of males; 2.8% of females), and SUD (6.5% of males; 5.4% of females). Females were more likely than males to receive diagnoses of: Mood Disorder (32.5% of females; 27.5% of males); Anxiety (26.9% of females; 17.5% of males), and PTSD (8% of females; 4.4% of males). Males and females using BHS are about equally as likely to receive No Diagnosis (about 12% for each). (Note, data are available for 2011 only.)

Exhibit 5b. Rates of Psychiatric Diagnoses among Children in Medicaid Using BHS, by Gender, 2011*

Psychiatric Diagnosis Type	2011		
	N % of Children**	Female T=1,072,386	Male T=1,522,127
ADHD	944,452 36.4%	275,239 25.7%	669,194 44.0%
Conduct Disorder	843,041 32.5%	306,010 28.5%	537,011 35.3%
Mood Disorder	828,153 31.9%	410,185 32.5%	417,949 27.5%
Anxiety	554,460 21.4%	288,676 26.9%	265,879 17.5%
PTSD	152,991 5.9%	85,783 8.0%	67,206 4.4%
Developmental Disability	138,298 5.3%	29,767 2.8%	108,501 7.1%
Psychosis	70,951 2.7%	30,229 2.8%	40,718 2.7%
SUD Diagnosis	157,764 6.1%	58,278 5.4%	99,485 6.5%
Other Diagnosis	125,980 4.9%	53,293 5.0%	72,685 4.8%
No Diagnosis	318,292 12.3%	132,245 12.35%	185,826 12.2%

**Data not available for 2005 and 2008.*

***Does not sum to 100% because children may receive more than one diagnosis.*

Rates of Psychiatric Diagnoses among Children in Medicaid Using BHS by Aid Category (Exhibit 5c)

Between 2005 and 2011, rates of every type of psychiatric diagnosis increased for all aid categories of children, except for Psychosis (which went down for children in foster care) and SUD (which was not captured in 2005). For TANF-enrolled children, rates of specific diagnoses types increased as follows:

- Conduct Disorder increased 156% (from 12.4% of children who used BHS receiving this diagnosis in 2005 to 31.8% in 2011);
- Mood Disorder increased 118% (from 14.2% to 30.9%);
- Anxiety increased 68% (from 13.4% to 22.5%);
- Developmental Disability increased 81% (from 1.6% to 2.9%);
- ADHD diagnosis increased 9% (from 30.8% to 33.5%); and
- Psychosis increased 5% (from 1.9% to 2.0%).

For children in foster care, the percentage of children receiving each type of diagnosis increased as follows:

- Conduct Disorder increased 112% (from 18.8% to 39.9%);
- Mood Disorder increased 98% (from 19.8% to 39.3%);
- Anxiety increased 20% (from 19.3% to 23.2%);
- ADHD increased 17% (from 32.4% to 38%);
- Developmental Disability increased 39% (from 3.3% to 4.6%); and
- The percentage with a diagnosis of Psychosis fell 3% (from 3.1% to 3%).

For children on SSI/disability, the percentage of children receiving each type of diagnosis increased as follows:

- Conduct Disorder increased 94% (from 15.7% to 30.4%);
- Mood Disorder increased 63% (from 19.3% to 31.4%);
- Anxiety increased 45% (from 10.6% to 15.4%);
- ADHD increased 8% (from 44.2% to 47.8%);
- Developmental Disability increased 46% (from 11.2% to 16.4%); and
- Psychosis increased 10% (from 5% to 5.5%).

For TANF-enrolled children, the top three diagnoses in 2005 were, in order: ADHD, Mood Disorder, and Anxiety. In 2011, the top three were: ADHD, Conduct Disorder, and Mood Disorder. In 2005, TANF-enrolled children were less likely than other aid categories of children to receive any type of diagnosis and more likely to receive No Diagnosis. In 2011, however, they were more likely to receive diagnoses of Conduct Disorder and Anxiety than children on SSI/disability, and equally as likely as children on SSI/disability to receive a diagnosis of PTSD or No Diagnosis.

In 2005, the top three diagnoses received by children in foster care were: ADHD, Mood Disorder, and Anxiety. In 2011, the top three were: Conduct Disorder, Mood Disorder, and ADHD. In both 2005 and 2011, children in foster care were more likely than other aid categories of children to receive diagnoses of Conduct Disorder, Mood Disorder, and Anxiety, and in 2011, they were more likely than other aid categories to receive diagnoses of PTSD and SUD (not captured in 2005). They were less likely in 2005 to receive a diagnosis of ADHD compared to children in other aid categories, but in 2011, were more likely than TANF-enrolled children to receive an ADHD diagnosis. In 2011, children in foster care were less likely than other aid categories to receive No Diagnosis.

In both 2005 and 2011, the top three diagnoses received by children on SSI/disability were: ADHD, Mood Disorder, and Conduct Disorder. In both study years, they were more likely than other children to receive diagnoses of ADHD, Developmental Disability, and Psychosis. In 2011, they were less likely to receive diagnoses of Anxiety and SUD.

Exhibit 5c. Rates of Psychiatric Diagnoses among Children in Medicaid Using BHS, by Aid Category, 2005 and 2011*

Psychiatric Diagnosis Type	2005				2011			
	N % of Children**	TANF T=1,316,635	Foster Care T=293,885	SSI/ Disabled T=348,338	N/% of Children**	TANF T=1,871,430	Foster Care T=286,845	SSI/ Disabled T=436,542
ADHD	654,772 33.4%	405,655 30.8%	95,226 32.4%	153,891 44.2%	944,452 36.4%	626,921 33.5%	108,838 38.0	208,693 47.8
Conduct Disorder	272,288 13.9%	162,792 12.4%	54,894 18.8%	54,549 15.7%	843,041 32.5%	595,826 31.8	114,321 39.9	132,894 30.4
Mood Disorder	312,642 16.0%	187,053 14.2%	58,289 19.8%	67,270 19.3%	828,153 31.9%	578,644 30.9	112,648 39.3	136,861 31.4
Anxiety	270.721 13.8%	176,966 13.4%	56,682 19.3%	37,063 10.6%	554,460 21.4%	420,872 22.5	66,519 23.2	67,169 15.4
PTSD***	N/A	N/A	N/A	N/A	152,991 5.9%	93,284 5.0	37,719 13.1	21,988 5.0
Developmental Disability	69,541 3.6%	20,639 1.6%	9,824 3.3%	39,173 11.2%	138,298 5.3%	53,479 2.9	13,315 4.6	71,504 16.4
Psychosis	51.323 2.6%	24,572 1.9%	9,453 3.2%	17,362 5.0%	70,951 2.7%	38,318 2.0%	8,794 3.1%	23,839 5.5%
SUD Diagnosis***	N/A	N/A	N/A	N/A	157,764 6.1%	118,431 6.3	22,099 7.7	17,234 3.9
Other Diagnosis	16,259 0.8%	9,938 0.8%	2,018 0.7%	4,208 1.2%	125,980 4.9%	75,966 4.1	26,553 9.3	23,461 5.4
No Diagnosis	766,525 39.1%	562,711 42.7%	103,805 35.3%	99,856 28.7%	318,292 12.3%	237,156 12.7	26,149 9.1	54,987 12.6

**Data not available for 2008.*

***Does not sum to 100% because children may receive more than one diagnosis.*

****PTSD and SUD diagnosis data were not collected for 2005.*

Rates of Psychiatric Diagnoses among Children in Medicaid Using BHS by Race/Ethnicity (Exhibit 5d)

In 2011, as discussed earlier, the top three diagnoses for all children using BHS were, in order: ADHD, Conduct Disorder, and Mood Disorder. ADHD was the most frequently used diagnosis for White and BL/AA children, but this was not the case for any other racial/ethnic group. Conduct Disorder was the most frequently used diagnosis for AI/AN and Multiracial children. Mood Disorder was the most frequently received diagnosis by Asian, Hispanic/Latino, NH/PI, and Hispanic/Latino children of more than one race.

BL/AA children are the most likely racial/ethnic cohort to receive a diagnosis of ADHD and the least likely to receive diagnoses of Mood Disorder, Anxiety, and PTSD. BL/AA and Multiracial children are the most likely to receive diagnoses of Conduct Disorder. Multiracial children have the lowest rate of SUD diagnosis and of No Diagnosis. AI/AN children are the most likely to receive diagnoses of Mood Disorder, Anxiety, PTSD, and SUD. Their rates of receiving PTSD diagnoses are 28%-129% higher than that of other racial/ethnic cohorts of children, and their rates of SUD diagnosis are 89%-165% higher than that of other groups. Although overall percentages are small, Asian children are the most likely to receive a diagnosis of Developmental Disability, with a rate that is 53%-217% higher than that of other groups. Asian and NH/PI children are the most likely to receive No Diagnosis. Hispanic/Latino children have the lowest rates of a Developmental Disability diagnosis, and Hispanic/Latino children of more than one race have neither the highest nor lowest rates of any diagnosis.

Exhibit 5d. Rates of Psychiatric Diagnoses among Children in Medicaid Using BHS by Race/Ethnicity, 2011*

Psychiatric Diagnosis Type	2011									
	N % of Children**	White	Black/African American	American Indian/Alaska Native	Asian	Hispanic or Latino	Native Hawaiian/ Pacific Islander	Hispanic/ Latino + one/more races	More than one race	Unknown
ADHD	944,452 36.4%	464,076 37.8%	231,812 38.5%	10,419 28.6%	3,479 19.3%	90,990 27.4%	906 18.9%	35,629 29.9%	8,875 35.8%	98,166 42.9%
Conduct Disorder	843,041 32.5%	391,470 31.9%	224,650 37.3%	13,530 37.1%	3,900 21.7%	95,466 28.8%	1,174 24.5%	36,806 30.9%	9,891 39.9%	66,154 28.9%
Mood Disorder	828,153 31.9%	422,730 34.4%	176,118 29.2%	13,480 37.0%	5,374 29.9%	98,097 29.6%	1,464 30.6%	37,249 31.3%	8,112 32.7%	65,529 28.6%
Anxiety	554,460 21.4%	302,140 24.6%	89,054 14.8%	9,591 26.3%	4,285 23.8%	74,654 22.5%	1,142 23.8%	27,177 22.8%	6,268 25.3%	40,249 17.6%
PTSD	152,991 5.9%	80,984 6.6%	28,892 4.8%	3,998 11.0%	899 5.0%	17,202 5.2%	334 7.0%	7,468 6.3%	2,122 8.6%	11,092 4.8%
Developmental Disability	138,298 5.3%	73,282 6.0%	20,603 3.4%	1,203 3.3%	1,650 9.2%	9,691 2.9%	260 5.4%	5,140 4.3%	1,069 4.3%	25,400 11.1%
Psychosis	70,951 2.7%	28,531 2.3%	20,052 3.3%	897 2.5%	657 3.7%	7,834 2.4%	159 3.3%	4,169 3.5%	593 2.4%	8,059 3.5%
SUD Diagnosis	157,764 6.1%	78,616 6.4%	33,554 5.6%	5,021 13.8%	1,064 5.9%	22,447 6.8%	348 7.3%	6,907 5.8%	1,294 5.2%	8,513 3.7%
Other Diagnosis	125,980 4.9%	60,038 4.9%	30,328 5.0%	2,164 5.9%	846 4.7%	15,073 4.5%	281 5.9%	5,004 4.2%	1,317 5.3%	10,929 4.8%
No Diagnosis	318,292 12.3%	123,879 10.1%	79,560 13.2%	4,033 11.1%	3,636 20.2%	53,011 16.0%	991 20.7%	17,555 14.7%	2,124 8.6%	33,503 14.6%
All Children Receiving BHS	**2,594,817**	**1,228,951**	**602,129**	**36,460**	**17,983**	**331,780**	**4,790**	**119,048**	**24,775**	**228,901**

**Data not available for 2005 and 2008.*

***Does not sum to 100% because children may receive more than one diagnosis.*

Highlights and Implications of the Data

- Over a third of children received a diagnosis of ADHD in 2011, the most frequently used diagnosis in all three study years, with a 9% increase between 2005 and 2011 in the percentage receiving an ADHD diagnosis. ADHD was followed closely by diagnoses of Conduct Disorder and Mood Disorder, each received by slightly under a third of children. Slightly under a quarter of children received a diagnosis of Anxiety, which was 22% more than in 2008.
- About 6% of children received a diagnosis of PTSD in 2011, slightly up from 2008, and about 6% received a diagnosis of SUD, about the same as in 2008.
- Small percentages of children received a diagnosis of Developmental Disability — about 5% in 2008 and 2011, up from 3.6% in 2005 — or of Psychosis — less than 3% in all three study years.
- About 12% of children using BHS received No Diagnosis in 2011, down from 39% in 2005 and 17% in 2008.
- The top three diagnoses for young children, ages 0-5, in 2011 were Conduct Disorder, ADHD, and Anxiety, and they were more likely than other age groups to receive a diagnosis of Developmental Disability or No Diagnosis, and about equally as likely to receive a diagnosis of Conduct Disorder as children, ages 6-12. They were less likely than other age groups to receive diagnoses of Mood Disorder, Anxiety, Psychosis, PTSD, and SUD.
- The top three diagnoses for children, ages 6-12, were ADHD, Conduct Disorder, and Mood Disorder, and they were more likely than other age groups to receive a diagnosis of ADHD.
- The top three diagnoses for adolescents, ages 13-18, were Mood Disorder, Conduct Disorder, and ADHD, and they were more likely than other children to receive diagnoses of Mood Disorder, Anxiety, PTSD, Psychosis, and SUD, and less likely to receive a diagnosis of Developmental Disability.
- The top three diagnoses received by males using BHS in 2011 were ADHD, Conduct Disorder, and Mood Disorder, while the top three diagnoses received by females were: Mood Disorder, Conduct Disorder, and Anxiety. Males were more likely than females to receive diagnoses of ADHD, Conduct Disorder, Developmental Disability, and SUD. Females were more likely than males to receive diagnoses of Mood Disorder, Anxiety, and PTSD. Males and females were about equally as likely to receive No Diagnosis.
- For TANF-enrolled children, the top three diagnoses in 2011 were ADHD, Conduct Disorder, and Mood Disorder, and they were more likely to receive diagnoses of Conduct Disorder and Anxiety than children on SSI/disability, and equally as likely as children on SSI/disability to receive a diagnosis of PTSD or No Diagnosis.
- The top three diagnoses received by children in foster care in 2011 were Conduct Disorder, Mood Disorder, and ADHD, and they were more likely than all other aid categories of children to receive diagnoses of Conduct Disorder, Mood Disorder, Anxiety, PTSD, and SUD, and less likely than other aid categories to receive No Diagnosis.
- In both 2005 and 2011, the top three diagnoses received by children on SSI/disability were: ADHD, Mood Disorder, and Conduct Disorder. In both study years, they were more likely than other children to receive diagnoses of ADHD, Developmental Disability, and Psychosis. In 2011, they were less likely to receive diagnoses of Anxiety and SUD.
- ADHD was the most frequently used diagnosis for White and BL/AA children in 2011, but this was not the case for any other racial/ethnic group. Conduct Disorder was the most frequently used diagnosis for AI/AN and Multiracial children. Mood Disorder was the most frequently received diagnosis by Asian, Hispanic/Latino, NH/PI, and Hispanic/Latino children of more than one race.
- BL/AA children were the most likely racial/ethnic cohort to receive a diagnosis of ADHD and the least likely to receive diagnoses of Mood Disorder, Anxiety, and PTSD. BL/AA and Multiracial children were the most likely to receive diagnoses of Conduct Disorder. AI/AN children were the most likely to receive diagnoses of Mood Disorder, Anxiety, PTSD, and SUD. Their rates of receiving PTSD diagnoses are 28%-129% higher than those of other racial/ethnic cohorts of children, and their rates of SUD diagnosis are 89%-165% higher than those of other groups. Although overall percentages are small, Asian children were the most likely to receive a diagnosis of Developmental Disability, with a rate that is 53%-217% higher than that of other groups. Asian children also were the most likely to receive a diagnosis of Psychosis, although, again, the overall percentage is small, as are the rate differences among other groups of children. Asian and NH/PI

children were the most likely to receive No Diagnosis. Hispanic/Latino children had the lowest rate of a Developmental Disability diagnosis, and Hispanic/Latino children of more than one race had neither the highest nor lowest rates of any diagnosis.

There has been controversy in the psychiatric community as to whether ADHD is being over diagnosed in children, particularly with the broadening of the criteria for the diagnosis in 2013 with the DSM-5 criteria.[13] While the *Children's Faces of Medicaid* study has found that ADHD is the most frequently used diagnosis and that there was a 9% increase in the percent of children diagnosed with ADHD between 2005 and 2011, there were higher percentage increases for all other diagnosis types, except for Psychosis, which remained low and about the same across all study years. It will be important to track the diagnoses data post the DSM-5 criteria issued in 2013.

The fact that Conduct Disorder was the most frequently used diagnosis in 2011 for young children, ages 0-5, is concerning. Conduct Disorder in young children may mask other issues such as learning problems or trauma, and it often manifests in early childhood settings like Head Start and preschool programs. There is significant potential for early intervention and partnerships between these settings, as well as primary care, and the mental health community. A relatively small percentage of children, 6% on average, of any age were diagnosed with PTSD, although estimates of childhood exposure to traumatic events are much higher. [14] Not every child exposed to traumatic events develops PTSD; however, a recent review of research on children exposed to specific traumas found the following ranges in rates of PTSD:

- 20% to 63% in survivors of child maltreatment;
- 12% to 53% in the medically ill;
- 5% to 95% in disaster survivors; and
- In a community sample of older adolescents, 14.5% of those who had experienced a serious trauma developed PTSD.[15], [16]

These rates are well above the 6% rate of PTSD diagnosis found among children in Medicaid in the 2011 Medicaid MAX data. It may well be that some children are receiving other types of diagnoses — Conduct Disorder, for example — for behaviors that mask underlying PTSD.

The differences in predominant diagnoses between males and females and among different racial/ethnic cohorts of children warrant further analysis. For example, some studies have found higher prevalence for ADHD among BL/AA children, consistent with the higher rate of ADHD diagnosis found in this study. Other studies have found ADHD prevalence in BL/AA children as like that of White children, who also had relatively high rates of ADHD diagnosis in this study. Recent research has found that Asian children have higher prevalence for Anxiety and Depression than their peers,[17] consistent with this study's findings that Asian children are more likely than their peers to receive a diagnosis of Anxiety. Other studies, however, have found similar prevalence for Anxiety between Asian children and their peers. The research is consistent, however, on the higher prevalence for PTSD, SUD, and Depression in the AI/AN population, like the findings in this study of higher rates of PTSD, SUD, and Mood Disorder diagnoses in AI/AN children. Many of the prevalence studies that have been conducted are not focused specifically on the Medicaid child population, which creates additional challenges to using broader research to understand differences in diagnoses among children in Medicaid who use BHS.

Medicaid Expenditures for Children Using Behavioral Health Care

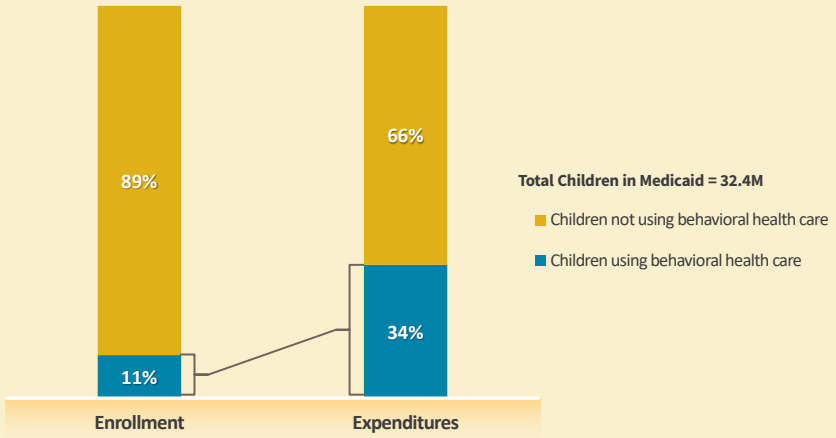
What the Data Show

Total Health Expenditures for Children Using Behavioral Health Care (Exhibit 6 and Chart 4)

The study estimated total expenditures in Medicaid, including both physical and behavioral health expense, for three populations: children using behavioral health care, which includes all children receiving BHS and all children receiving psychotropic medication, whether or not they also received BHS; the smaller subset of children who received BHS, whether or not they also received psychotropic medication; and the smallest subset: children using BHS who were enrolled in Medicaid FFS, for whom actual expenditure data were available. Because expenditure data were not available for children in capitated Medicaid managed care arrangements, FFS expenditure data were used to estimate expense for the managed care population. There are obvious caveats to imputing FFS expense to service use in managed care, where, typically, there is a broader mix of children with varying intensity of need compared to children in FFS, who often include primarily those with more intensive behavioral health needs, such as those in child welfare and children with serious emotional disturbance. Both because of the difference in population mix and because managed care is intended to manage costs more closely, one would expect mean expense in managed care arrangements to be lower than in FFS; thus, the estimates in Exhibit 6 may overstate total expenditures to some unknown degree.

For children using behavioral health care (all children using services and all children using psychotropic medication, with or without services), total expense increased 11% between 2005 and 2008, from $19.3 billion to $21.5 billion, and increased 40% between 2008 and 2011 to $30.2 billion — an overall increase of 56% between 2005 and 2011. This was driven by a cumulative 67% increase in total physical health expense and a 44% increase in behavioral health care spending between 2005 and 2011. Part of the increase can be attributed to the nearly 12% growth in the Medicaid child population during the same period, and to the 17% increase in the number of children using behavioral health care, including increases in the use of expensive service types such as inpatient psychiatric treatment, in addition to health care inflation and the rising cost of psychotropic medications.

Chart 4. Children Using Behavioral Health Care as a Proportion of Total Medicaid Enrollment, 2011



For children using BHS (with or without accompanying psychotropic medications), total expense increased 32% between 2005 and 2008, from $15.2 billion to $20.1 billion, and 20% between 2008 and 2011 to $24.2 billion — for an overall increase of 59% between 2005 and 2011. This was driven by a 79% increase in physical health care expense and a 41% increase in behavioral health expenditures.

For children enrolled in FFS who used BHS, the increases in spending are much less marked, partly because the service needs of this relatively small population are less dynamic from one year to the next and the population is decreasing in size as more children are enrolled in managed care. Total spending for this group increased less than 1% between 2005 and 2008, from $10.4 billion to $10.5 billion, and by 7% between 2008 and 2011 to $11.2 billion — for an overall increase of 8% between 2005 and 2008. This was driven entirely by a 16% increase in physical health care expense as behavioral health care spending remained static.

For the subset of children in FFS with the top 10% of expense for BHS use, overall health spending decreased by 42% between 2005 and 2008, due largely to the reduced number of children in FFS, and then increased by 38% between 2008 and

2011, due mainly to the increased number of children enrolled in Medicaid. The spending decrease between 2005 and 2008 was driven by a 63% decrease in physical health care expense and a 26% decrease in behavioral health care expense. The spending increase between 2008 and 2011 was driven entirely by a 65% increase in behavioral health expense, as physical health spending declined by 27%.

Health care expense for children in Medicaid using behavioral health care has remained disproportionately high throughout all three study years compared to their representation among Medicaid children in general. Children using behavioral health care in Medicaid in 2011 represented 11% of all Medicaid children but accounted for 36% of all Medicaid child expenditures. Children in the top 10% of behavioral health expense are 0.3% of the Medicaid child population but accounted for over 5% of all Medicaid child spending in 2011.

Exhibit 6. Total Estimated Health Expenditures for Children in Medicaid Using Behavioral Health Care, 2005, 2008, and 2011

	N of Children (% of Medicaid Child Population)			Physical Health Expenditures			Behavioral Health Expenditures			Combined Expenditures		
	2005	2008	2011	2005	2008	2011	2005	2008	2011	2005	2008	2011
Total users of behavioral health care (services and/or psychotropic medications) *	2,787,919 (9.6%)	3,002,796 (9.8%)	3,617,140 (11.2%)	$10.8B	$16B	$18B	$8.5B	$9.9B	$12.2B	$19.3B (38.4%)	$21.5B (37.7%)	$30.2B (36.7%)
Users of BHS (including children with at least one BHS with or without concomitant psychotropic medication use)	1,958,908 (6.7%)	2,059,282 (6.8%)	2,594,817 (8%)	$7.2B	$11B	$12.9	$8.0B	$9.1B	$11.3B	$15.2B (30.3%)	$20.1B (35.2%)	$24.2B (29%)
Children using BHS with FFS expenditure data**	1,213,201 (4.2%)	849,232 (2.8%)	1,084,267 (3.3%)	$4.4B	$4.5B	$5.1B	$6.0B	$6.0B	$6.0B	$10.4B (20.7%)	$10.5B (18.4%)	$11.2B (13.4%)
Children in FFS with Top 10% of Expense for Child BHS Use***	121,323 (0.4%)	84,931 (0.3%)	108,427 (0.3%)	$2.4B	$885.8M	$642.4M	$3.1B	$2.3B	$3.8B	$5.5B (11.0%)	$3.2B (5.6%)	$4.4B (5.3%
All children in Medicaid	**29,050,305**	**30,503,614**	**32,384,256**							**$50.2B**** ***	**$57.1B**** *	**$82.4B****

**Includes all children using BHS and all children using psychotropic medications.*

***Includes children not enrolled in capitated managed care; i.e., children with FFS expenditure data.*

****Includes children not enrolled in capitated managed care; i.e., children with FFS expenditure data.*

*****CMS and Kaiser Commission on Medicaid and the Uninsured/Urban Institute.*

Mean Health Expenditures for Children Using BHS (Exhibit 7)

The study estimated mean health expense for children who used BHS (with or without concomitant psychotropic medication use), as well as for the top 10% of these children with highest expense. Exhibit 7 also shows mean expense by aid category. Mean overall expense for children using BHS has increased in each year of the study, from $8,520 in 2005, to $9,928 in 2008, to $10,259 in 2011 — a 20% increase between 2005 and 2011. For children in the top 10% of behavioral health expense, the mean expenditure increased even more — by 26% between 2005 and 2011 — going from $37,348 in 2005, to $38,083 in 2008, to $46,959 in 2011. For comparative purposes, the mean expense for all children in Medicaid in 2011 was estimated at $2,492.[18] In other words, the mean expense for children using BHS in 2011 was over four times higher than for children in Medicaid who did not use BHS.

Mean expense for children using BHS was higher for behavioral health than for physical health care in both 2005 and 2011, even with the physical health mean expense increasing by 30% between 2005 and 2011, compared to a 13% increase in the mean for behavioral health. For children in the top 10% of behavioral health expense, expense was significantly driven more by behavioral health than by physical health in all three study years. In 2011, for example, mean behavioral health expense for this group was $36,646, and the mean for physical health was $10,314. The physical health mean expense for this group increased 21% between 2005 and 2011, compared to a 27% increase in the behavioral health mean expense.

Exhibit 7. Mean Health Expenditures for Children Using BHS, 2005, 2008, and 2011

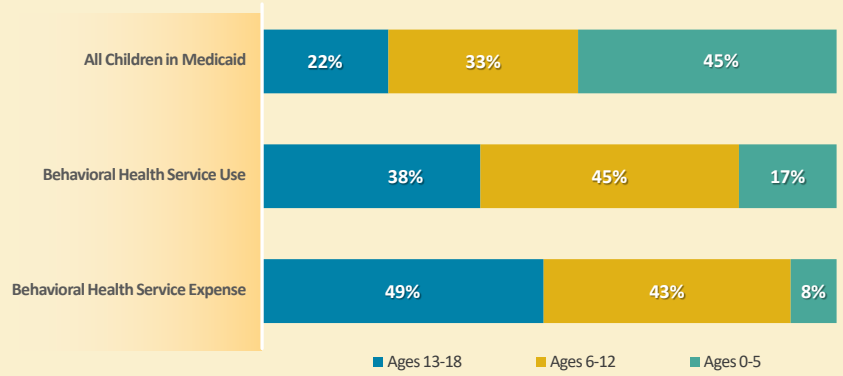
	2005					2008					2011				
	All Children Using BHS	TANF	Foster Care	SSI/ Disabled	Children in Top 10% BHS Expense	All Children Using BHS	TANF	Foster Care	SSI/ Disabled	Children in Top 10% BHS Expense	All Children Using BHS	TANF	Foster Care	SSI/ Disabled	Children in Top 10% BHS Expense
BHS	$4,868	$3,029	$8,094	$7,264	$28,815	$4,571	$3,119	$7,018	$6,243	$27,654	$5,517	$3,634	$9,318	$8,034	$34,786
Physical Health Services	$3,652	$2,053	$4,036	$7,895	$8,532	$5,357	$3,156	$5,921	$9,983	$10,429	$4,742	$2,653	$3,787	$11,051	$10,314
Total Health Services	**$8,520**	**$5,082**	**$12,130**	**$15,159**	**$37,348**	**$9,928**	**$6,275**	**$12,939**	**$16,226**	**$38,083**	**$10,259**	**$6,287**	**$13,105**	**$19,086**	**$40,711**

Child Behavioral Health Total and Mean Expense by Gender and Age Group (Exhibit 7a)

Total expenditures for girls increased 45% between 2005 and 2011, from $2.9 billion to $4.2 billion, and their mean expense increased 5%, from $3,769 in 2005 to $3,948 in 2011. Total expenditures for boys increased 39% during this period, from $5.1 billion to $7.1 billion, and their mean expense increased 8%, from $4,318 in 2005 to $4,671 in 2011. Higher total and mean expense for boys is attributable to several factors, including their higher numbers among children using BHS, the fact that more boys tend to use more expensive service types, such as residential treatment/group care, and as discussed later, boys would appear to be staying longer in services than girls. In 2011, boys used 63% of total expenditures and represented 58.7% of children using services, while girls used 37% of total dollars but represented 41.3% of total users.

Total expense for young children, ages 0-5, increased 130% between 2005 and 2011, from $373.6 million to $859 million, and their mean expense increased 13%, from $1,717 in 2005 to $1,946 in 2011. Total expenditures for children, ages 6-12, increased 69%, from $2.9 billion to $4.9 billion, and their mean expense increased 25%, from $3,353 in 2005 to $4,186 in 2011. Expenditures for adolescents, ages 13-18, increased 19%, from $4.7 billion to $5.6 billion, and their mean expense increased 5%, from $5,409 in 2005 to $5,682 in 2011. Adolescents have higher expenditures due to their greater use of expensive service types such as residential treatment/group care. In 2011, they consumed 49% of total spending but represented only 37.9% of children using services (**chart 5**). Children, ages 6-12, used 43% of total dollars and represented 45.1% of those using services, roughly proportional. Young children, ages 0-5, used 8% of total spending but represented 17% of children using services. Young children, ages 0-5, have a significantly lower mean expense than other age groups and are less likely to use expensive service types such as residential treatment/group care.

Chart 5. Medicaid Enrollment, Behavioral Health Service Use, and Expense by Age Group, 2011



Child Behavioral Health Total and Mean Expense by Race/Ethnicity (Exhibit 7a. Note, race/ethnicity data are not available for 2005)

Between 2008 and 2011, total behavioral health expenditures increased for all racial/ethnic groups except American Indian/Native American children, whose total expense decreased 8%, from $260.4 million to $239.3 million, attributable both to their 7% decreased representation among those using services over the same period and to a 13% decrease in their mean expenditure, from $7,556 in 2008 to $6,564 in 2011. Even with this decrease, AI/AN children had the highest mean expense due to their relatively higher use of expensive service types, such as residential treatment/group care, and their share of dollars at 2.1% is greater than their 1.4% representation among children using services and their 1.2% representation among children in Medicaid.

While White children had a 4% decrease in representation among children using BHS between 2008 and 2011, and a slight (1%) decrease in their mean expense (from $4,519 to $4,472), they still had a 20% increase in total expenditures between 2008 and 2011, from $4.6 billion to $5.5 billion. Similarly, BL/AA children had a 12% decrease among children using services and a 4% decrease in mean expense (from $4,845 to $4,667) but still experienced an 8% increase in total expenditures between 2008 and 2011, from $2.6 billion to $2.8 billion. White and BL/AA children are the two largest racial/ethnic cohorts of children using services and the largest cohorts using all specific service types, except for respite and Multisystemic Therapy (MST), which are used by more Hispanic/Latino children than by BL/AA children, though the number of children using these services overall is very small. The relatively large representation of White and BL/AA children among those using services, and their use of a broad range of service types, partially account for the increase in their total expense; for both groups, their share of all spending exceeds their representation among children using services and within the Medicaid child population. White children used nearly 49% of all child behavioral health dollars in 2011 but were 47.4% of those using services and 37% of the Medicaid child population. BL/AA children used nearly 25% of all behavioral health dollars compared to their 23.2% representation among those using services and 23% makeup in the Medicaid child population.

Total expenditures for Asian children increased 79% between 2008 and 2011, from $39.7 million to $71 million, partially attributable to their 17% increased representation among children using services, plus their mean expense increased 10% from $3,538 to $3,950. Even with the increase in spending, however, their share of spending at 0.6% is lower than their 0.7% representation among children using services and quite a bit lower than their 2.4% representation in the Medicaid child population.

Total expenditures for Hispanic/Latino children increased 90% between 2008 and 2011, from $527.7 million to $1 billion, partially attributable to their 13% increase among children using services, plus their mean expense increased 35%, from $2,270 to $3,070. However, their share of spending at 9% is well below their 12.8% representation among children using services and their 22.4% representation among Medicaid children. Hispanic/Latino children also have the lowest mean expense, which may be due to their relatively lower use of certain expensive services such as residential treatment and partial hospitalization/day treatment, but which may also suggest that Hispanic/Latino children are not receiving the same duration (intensity) of services. Hispanic/Latino children of more than one race have the second lowest mean expense, and their mean expenditures decreased 12% between 2008 and 2011, from $3,933 to $3,446. Overall expenditures for this cohort increased 64% between 2008 and 2011, from $249.7 million to $410.2 million, partially reflecting their 48% increased representation among children using services. Even with the increase in spending, their share of spending at 3.6% is below their 4.6% representation among children using services and their 5.3% representation among Medicaid children. In other words, Hispanic/Latino children and Hispanic/Latino children of more than one race together represent nearly 28% of the Medicaid child population, but only 17% of those using BHS and only 12% of total dollars spent.

Total expenditures for NH/PI children increased 85% between 2008 and 2011, from $11.6 million to $21.5 million, although their representation among those using services remained the same in both years. Their mean expense increased 27%, from $3,538 to $4,479 partially explaining the increase in total expense. Their share of total spending at 0.2% matched their representation among those using services (also 0.2%), with both well below their 0.5% representation among children in Medicaid.

Multiracial children, whose ranks grew 100% among those using services, experienced a 137% increase in total expense between 2008 and 2011, from $55.8 million to $132.5 million, even though their mean expense dropped 7%, from $5,721 to $5,348. Their share of total spending at 1.2% exceeds their 1% representation among those using services, both of which exceed their 0.7% representation in the Medicaid child population.

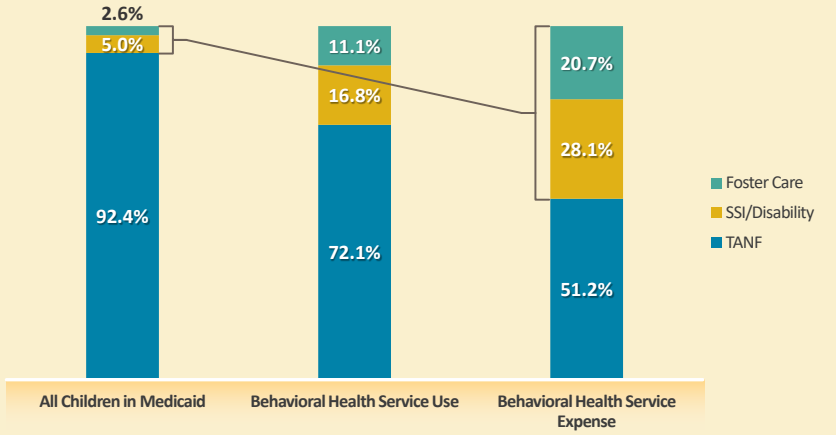
Child Behavioral Health Total and Mean Expense by Aid Category (Exhibit 7a and Chart 6)

Among all aid categories, children in foster care have consistently had the highest mean expense for BHS across all three study years, and their mean expense increased 15% between 2005 and 2011, from $8,094 to $9,318. Their total behavioral health expenditures ($2.3 billion) are disproportionately high relative to their representation among children using BHS. In 2011, they used 21% of total child behavioral health expenditures but were only 11% of the population using services. While their total expense remained the same between 2005 and 2011 at $2.3 billion, there were over 7,000 fewer children in foster care using BHS in 2011 (primarily due to their declining numbers in the overall Medicaid child population during this period).

Children on SSI/disability have the second highest mean expense for BHS, and their mean expense increased 11% between 2005 and 2011, from $7,264 to $8,034. They, too, have disproportionately high total expenditures relative to their representation among children using BHS, accounting for 28% of total expense but only 16.9% of behavioral health users. Total expense for children on SSI/disability increased 45% between 2005 and 2011, from $2.2 billion to $3.2 billion.

Together, children in foster care and those on SSI/disability used 49% of all Medicaid child behavioral health dollars in 2011 but represented only 28% of all children using services.

Chart 6. Medicaid Enrollment, Behavioral Health Service Use, and Expense by Aid Category, 2011



Children enrolled through TANF consistently have had the lowest mean expenditures, even with a 20% increase in the mean from 2005 to 2011, from $3,029 to $3,634. Their total behavioral health expenditures consistently have been lower than their representation among children using services; in 2011, for example, they used 51% of total expense but were 72% of the population using services. Their total expenditures increased 41% between 2005 and 2011, from $4.1 billion to $5.8 billion.

Exhibit 7a. Medicaid Child BHS Total and Mean Expenditures by Age Group, Gender, Race & Ethnicity and Aid Category, 2005, 2008, and 2011

	2005			2008			2011		
	% of Child Behavioral Health Users	Total Expenditures (% of Total)	Mean Expense	% of Child Behavioral Health Users	Total Expenditures (% of Total)	Mean Expense	% of Child Behavioral Health Users	Total Expenditures (% of Total)	Mean
Age Group									
0 – 5 years	11.1%	373.6M (5%)	$1,717	16.7%	$671.1M (7%)	$1,957	17.0%	$859M (8%)	$1,946
6 – 12 years	44.4%	$2.9B (36%)	$3,353	43.4%	$3.6B (40%)	$4,083	45.1%	$4.9B (43%)	$4,186
13 – 18 years	44.5%	$4.7B (59%)	$5,409	40.0%	$4.8B (53%)	$5,821	37.9%	$5.6B (49%)	$5,682
Gender									
Female	39.6%	$2.9B (36%)	$3,769	40.7%	$3.3B (36%)	$3,920	41.3%	$4.2B (37%)	$3,948
Male	60.3%	$5.1B (64%)	$4,318	59.3%	$5.8B (64%)	$4,770	58.7%	$7.1B (63%)	$4,671
Race and Ethnicity*									
White	51.8%	N/A	N/A	49.3%	$4.6B (50%)	$4,519	47.4%	$5.5B (49%)	$4,472
Black or African American	25.3%	N/A	N/A	26.3%	$2.6B (29%)	$4,845	23.2%	$2.8B (25%)	$4,667
American Indian or Alaska Native	1.5%	N/A	N/A	1.7%	$260.4M (3%)	$7,556	1.4%	$239.3M (2.1%)	$6,564
Asian	0.6%	N/A	N/A	0.6%	$39.7M (0.4%)	$3,538	0.7%	$71M (0.6%)	$3,950
Hispanic or Latino	12%	N/A	N/A	11.3%	$527.7M (6%)	$2,270	12.8%	$1B (9%)	$3,070
Native Hawaiian or Pacific Islander	0.3%	N/A	N/A	0.2%	$11.6M (0.1%)	$3,538	0.2%	$21.5M (0.2%)	$4,479
Hispanic or Latino + one or more races	2.2%	N/A	N/A	3.1%	$249.7M (2.7%)	$3,933	4.6%	$410.2M (3.6%)	$3,446
More than one race	0.3%	N/A	N/A	0.5%	$55.8M (0.6%)	$5,721	1.0%	$132.5M (1.2%)	$5,348
Unknown	6%	N/A	N/A	7.1%	$758M (8.3%)	$5,161	8.8%	$1.1B (10%)	$5,002
Aid Category									
TANF	67.2%	$3.5B (44%)	$3,029	68.2%	$4.1B (45%)	$3,119	72.1%	$5.8B (51%)	$3,634
Foster Care	15%	$2.3B (29%)	$8,094	13.5%	$2.3B (25%)	$7,018	11.1%	$2.3B (21%)	$9,318
SSI/Disabled	17.8%	$2.2B (28%)	$7,264	18.3%	$2.7B (30%)	$6,243	16.8%	$3.2B (28%)	$8,034
All Children	**100%**	**$8B (100%)**	**$4,868**	**100%**	**$9.1B (100%)**	**$4,571**	**100%**	**$11.3B (100%)**	**$5,517**

**2005 race and ethnicity expenditure data were not available.*

Child Behavioral Health Mean Expense by Psychiatric Diagnosis (Exhibit 7b)

Children with a diagnosis of Psychosis, while a small segment of the child population using services, have consistently had the highest mean expense compared to children with other types of diagnoses, and the mean expense has increased in each year of the study — from $14,482 in 2005 to $16,176 in 2008, to $17,415 in 2011, a 20% increase between 2005 and 2011. Children with a diagnosis of PTSD have the next highest mean expenditure, which went from $11,673 in 2008 to $10,863 in 2011, a 6.9% decrease. Children with Developmental Disability had the third highest mean expense, which increased from $7,590 in 2005 to $8,146 in 2011, a 7% increase. Mean expense for children with Mood and Conduct Disorders decreased 27% and 21%, respectively, between 2005 and 2011, from $9,831 for Mood Disorder in 2005 to $7,204 in 2011, and from $8,144 for Conduct Disorder in 2005 to $6,456 in 2011. Mean expense for youth with SUD remained basically the same in 2008 and 2011 at about $6,900.

Children with ADHD and children with Anxiety consistently have had the lowest mean expenditures. Mean expense for children with ADHD was $5,298 in 2005, increasing to $5,838 in 2011 (a 10% increase). Mean expense for children with a diagnosis of Anxiety was $6,816 in 2005, decreasing to $5,115 in 2011 (a 25% decrease).

Exhibit 7b. Child Behavioral Health Mean Expenditures by Psychiatric Diagnosis 2005, 2008, and 2011

Psychiatric Diagnosis	2005	2008	2011
ADHD	$5,298	$6,038	$5,838
Conduct Disorder	$8,144	$7,070	$6,456
Mood Disorder	$9,831	$7,639	$7,204
Anxiety	$6,816	$5,222	$5,115
PTSD*	N/A	$11,673	$10,863
Developmental Disability	$7,590	$8,804	$8,146
Psychosis	$14,482	$16,176	$17,415
SUD Diagnosis*	N/A	$6,918	$6,930
Other Diagnosis	$7,398	$11,144	$9,716
No Diagnosis	$1,830	$1,287	$1,430
All Children Using Behavioral Health Services	**$4,868**	**$4,571**	**$5,517**

** PTSD and SUD diagnosis data were not collected for 2005.*

Highlights and Implications of the Data

- Medicaid expenditures for children who used behavioral health care were $30.2 billion in 2011, a 56% increase from 2005, which one may attribute to the 12% growth in the Medicaid child population, a 17% increase in the percentage of children using behavioral health care, an increase in use of expensive service types such as inpatient psychiatric hospitalization, an increase in the cost of psychotropic medications, and health care inflation.
- Children in Medicaid using behavioral health care are an expensive population. In 2011, they represented 11% of all Medicaid children but accounted for over 36% of all Medicaid child expenditures. Children in the top 10% of behavioral health expense were 0.3% of the Medicaid child population but accounted for over 5% of all Medicaid child spending in 2011.
- Mean overall expense for children using BHS has increased in each year of the study, from $8,520 in 2005, to $9,928 in 2008, to $10,259 in 2011 — a 20% increase between 2005 and 2011. For children in the top 10% of behavioral health expense, the mean expenditure increased even more — by 26% between 2005 and 2011 — going from $37,348 in 2005, to $38,083 in 2008, to $46,959 in 2011. The mean expense for children using BHS in 2011 was over four times greater than for children in Medicaid who did not use BHS.
- Mean expense for children using BHS was higher for behavioral health than for physical health care in both 2005 and 2011, even with the physical health mean expense increasing by 30% between 2005 and 2011, compared to a 13% increase in the mean for behavioral health. For children in the top 10% of behavioral health expense, expense was driven significantly more by behavioral health than by physical health in all three study years. Mean behavioral health expense for this group was $36,646 in 2011, compared to the mean for physical health of $10,314.
- Children in foster care consistently have had the highest mean expense for BHS across all three study years ($9,318 in 2011), and their total behavioral health expenditures ($2.3 billion in 2011, or 21% of total expenditures for children using BHS) are disproportionately high relative to their representation among children using BHS (11% of the population in 2011). Children on SSI/disability consistently have had the second highest mean expense ($8,034 in 2011) and disproportionately high total expenditures relative to their representation among children using BHS, accounting for 28% of total expense but only 16.9% of behavioral health users. Together, children in foster care and those on SSI/disability used 49% of all Medicaid child behavioral health dollars in 2011 but represented only 28% of all children using services.
- Children enrolled through TANF consistently have had the lowest mean expenditures ($3,634 in 2011), and consistently lower total expenditures than their representation among children using services; in 2011, they used 51% of total expense but were 72% of the population using services.
- Boys consistently have had disproportionately higher total and mean expense than girls. In 2011, boys used 63% of total expenditures and represented 58.7% of children using services, while girls used 37% of total dollars but represented 41.3% of total users.
- Adolescents, who use more expensive service types such as residential treatment/group care, consistently have had disproportionately higher total and mean expense than other age groups. In 2011, they consumed 49% of total spending but represented only 37.9% of children using services. Children, ages 6-12, used 43% of total dollars and represented 45.1% of those using services, roughly proportional. Young children, ages 0-5, used 8% of total spending but represented 17% of children using services. Young children have a significantly lower mean expense than other age groups and are less likely to use expensive service types such as residential treatment/group care.
- Between 2008 and 2011, total behavioral health expenditures increased for all racial/ethnic groups except AI/NA children, whose total expense decreased 8%, attributable to both their 7% decreased representation among those using services over the same period and a 13% decrease in their mean expenditure. Even with this decrease, AI/AN children had the highest mean expense due to their relatively higher use of expensive service types, such as residential treatment/group care, and their share of dollars at 2.1% is greater than their 1.4% representation among children using services and their 1.2% representation among children in Medicaid.
- White and BL/AA children constituted 70.6% of children using services in 2011 and used 73.5% of all child behavioral health dollars. White children used 49% of all child behavioral health dollars in 2011 and were 47.4% of those using services

and 37% of the Medicaid child population. BL/AA children used 25% of all behavioral health dollars compared to their 23.2% representation among those using services and 23% makeup in the Medicaid child population. Multiracial children also had a higher share of total spending, though slight, at 1.2% compared to their 1% representation among those using services, while NH/PI children's share of spending at 0.2% matched their 0.2% representation among children using services.

- In contrast, total spending for Hispanic/Latino children, Hispanic/Latino children of more than one race, and Asian children was substantially below their respective representation among children using services. Hispanic/Latino children used 9% of total dollars, which was well below their 12.8% representation among children using services and their 22.4% representation among Medicaid children. Hispanic/Latino children also had the lowest mean expense, which may be due to their relatively lower use of certain expensive services such as residential treatment and partial hospitalization/day treatment, but it also may suggest that Hispanic/Latino children are not receiving the same duration (intensity) of services. Hispanic/Latino children of more than one race had the second lowest mean expense, and their share of spending at 3.6% is below their 4.6% representation among children using services and their 5.3% representation among Medicaid children. In other words, Hispanic/Latino children and Hispanic/Latino children of more than one race represented nearly 28% of the Medicaid child population, but only 17% of those using BHS and only 12% of total behavioral health dollars spent.
- Asian children used 0.6% of all behavioral health dollars in 2011, which is lower than their 0.7% representation among children using services and quite a bit lower than their 2.4% representation in the Medicaid child population.
- Children with a diagnosis of Psychosis, while a small segment of the child population using services, have consistently had the highest mean expense ($17,415 in 2011) compared to children with other types of diagnoses, and the mean expense has increased in each year of the study. Children with a diagnosis of PTSD had the next highest mean expenditure ($10,863 in 2011), followed by children with Developmental Disability ($8,146 in 2011), and mean expense increased for both groups between 2005 and 2011. Mean expense for children with Mood and Conduct Disorders decreased 27% and 21%, respectively, between 2005 and 2011, from $9,831 for Mood Disorder in 2005 to $7,204 in 2011, and from $8,144 for Conduct Disorder in 2005 to $6,456 in 2011. Mean expense for youth with SUD remained basically the same in 2008 and 2011 at about $6,900. Children with ADHD and Anxiety diagnoses consistently have had the lowest mean expenditures, $5,838 in 2011 for those with ADHD and $5,115 for children with Anxiety disorders.

Children who use BHS are a growing population within Medicaid, and their costs are increasing. They are a segment of the Medicaid population for whom a growing body of evidence-informed approaches exists to improve the quality and cost of care, from intensive care-coordination approaches using fidelity Wraparound, to new models of mobile response and stabilization, evidence-based treatment practices such as Functional Family Therapy and MST, family and youth peer support, mental health consultation programs, and psychiatric medication consultation and monitoring approaches. While some states are incorporating these approaches into their Medicaid delivery systems, innovations have not begun to reach sufficient scale. For example, for the top 10% very high-need and most expensive cohort of children, too few health home approaches incorporate these evidence-informed practices because the health home design is based on the needs of adults with serious mental illness or those of children who are medically complex, whose costs are driven primarily by physical health care. For children with significant behavioral health challenges, whose costs are driven far more by behavioral health use, coordination among behavioral health providers and with other children's systems like child welfare typically requires far more attention than coordination with primary care. Because of the complexity of system involvement, often court involvement, and family issues, care coordination needs to be more intensive for this population, with lower care-coordination ratios and with more face-to-face time with youth and families. Health home approaches using intensive care coordination with fidelity Wraparound, as in New Jersey and Oklahoma, can reach this population, coordinate intensively across a range of systems and providers, and focus as well on the family and social determinants that impact behavioral health outcomes for these children. These approaches are especially critical for children in foster care and those on SSI/disability, who have disproportionately high behavioral health challenges, service use, and expense. States also could be focusing more closely on adolescent boys, who consistently have been a high using and expensive cohort.

The *Children's Faces of Medicaid* data clearly suggest areas of racial disparity and disproportionality. Hispanic/Latino children especially receive a substantially lower

share of Medicaid child behavioral health dollars than their representation among children using services or within the Medicaid child population would warrant, as do Asian children. As discussed in a later section, their lower share of spending may be because they are using lower-cost home and community-based services relative to facility-based care, and the data also suggest they may be staying in services for shorter durations. In contrast, AI/NA children appear to be at very high risk for use of facility-based care. While the disparities narrowed between 2005 and 2011, White children consistently have used a higher share of dollars than their representation among those using services or within the Medicaid child population; as discussed later, White children also have the highest rate of use of psychotropic medication, the cost of which has significantly increased. The *Children's Faces of Medicaid* data suggest areas to examine more closely to determine what is driving the noticeable disparity in spending on Hispanic/Latino and Asian children and the disproportionally higher spending on White and AI/AN children.

Behavioral Health Services Utilization by Service Type

What the Data Show

Use of Child BHS by Service Type (Exhibit 8)

The study has tracked the BHS most frequently used by children in Medicaid; "frequently used" is defined as used by 20% or more of children using BHS. The top five services most frequently used — outpatient (i.e. office-based), screening/assessment/evaluation, psychotropic medications, medication management, and family therapy — have not changed over the course of the study, except for slight changes in hierarchical order. However, in 2011, psychosocial rehabilitation services were added to the list of most frequently used services for the first time. Use of major service types and relevant changes are described below.

Screening/Assessment/Evaluation. The percentage of children who used BHS who received behavioral health screening/assessment/evaluation has steadily increased over the course of the study, from nearly 41% in 2005 to 45% in 2008 to nearly 47% in 2011, a 15% increase between 2005 and 2011.

Outpatient Therapy. Half or close to half of children using services received outpatient services, depending on the study year. Children receiving family therapy increased from 19% in 2005 to 23% in 2008 to 24% in 2011. Children receiving group therapy increased from 7.6% in 2005 to 8.5% in 2008 and then decreased to 8% in 2011.

Psychotropic Medication. Nearly 44% of children who used BHS received psychotropic medication as well, and this percentage has changed very little over the course of the study. However, only about 24% of children received medication management in 2008 and 2011, slightly up from 22% in 2005.

Home- and Community-Based. With respect to home- and community-based services (HCBS), use of psychosocial rehabilitation services has steadily increased from 12% of children using this service in 2005 to 18% in 2008 to 24% in 2011. Although overall use of other types of HCBS remained comparatively very low over the course of the study, there were some changes. After remaining about the same in 2005 and 2008 at 1.1%, Wraparound utilization increased to 1.5% in 2011. Use of peer support, often used in conjunction with Wraparound, also increased from 0.1% in 2005 and 2008 to 0.3% in 2011. Although the numbers remain small (7,437 children in total), five times more children who used BHS received peer support services in 2011 than in 2005 and nearly four times more than in 2008. After remaining at 0.2% in 2005 and 2008, use of supported housing increased to 0.3% in 2011, with over twice as many youth receiving this service in 2011 than in 2005 and over 50% more than in 2008, although the numbers remain small (7,225 youth). Use of MST, after failing to register as a percentage in 2005, increased to 0.1% of children using this service in 2008 and 2011, with three times more children using MST in 2011 than in 2005, though, again, the numbers remain very small (3,202 children). There was no change in the 0.1% of children receiving other (non-MST) home-based services. After a slight increase in use between 2005 and 2008, use of respite in 2011 dropped back down to 2005 levels at 0.2%. It should be noted that, in some states, many home and community-based services are coded as psychosocial rehabilitation services, use of which, as indicated, increased by over 90% since 2005 to include over 600,000 children in 2011. In addition, some states use Targeted Case Management (TCM) codes for Wraparound, and TCM increased 17% between 2005 and 2011.

Hospital and Residential. With respect to more restrictive levels of care, use of residential treatment/group care increased from 2005 to 2008, from 3.6% of children using residential in 2005 to 4.8% in 2008, and then dropped slightly to 4.2% in 2011. After remaining largely consistent between 2005 and 2008 at about 3%, the percentage of children using inpatient psychiatric services increased to 5.2% in 2011, with the number of children in inpatient more than doubling. Use of partial hospitalization/day treatment services, after increasing from 3.3% to 4.6% between 2005 and 2008, dropped to 3.9% in 2011. Use of therapeutic foster care also dropped from 0.8% in 2005 to 0.5% in 2011.

Emergency Room and Crisis Services. Emergency room use remained generally stable at 6% in 2008 and 2011, while use of non-hospital crisis alternatives increased from 3.5% in 2005 and 3.6% in 2008 to 4.3% in 2011.

Case Management. For the first time over the course of the study, in 2011, more children used TCM than regular case management. Use of TCM decreased 21% between 2005 and 2008, from 7.1% to 5.6% of children, probably due to changes in federal policy at that time; use of TCM then increased by 48% between 2008 and 2011, with 8.3% of children using TCM in 2011. At the same time, regular case

management, use of which had increased 10% between 2005 and 2008, from 8.7% to 9.6% of children, decreased by 52% between 2008 and 2011 to 6.3% of children.

Mental Health Consultation. The percentage of children receiving mental health consultation has stayed about the same across all three study years, at about 3%.

Substance Use. The percentage of youth using BHS who received substance use screening and assessment, after increasing from 2.9% to 3.5% between 2005 and 2008, fell to 1.7% in 2011. The percent of youth who received substance use residential or inpatient services also fell between 2005 and 2011, from 0.3% to 0.2%. Substance use outpatient care were provided to 1.7% of youth receiving BHS in 2011.

Exhibit 8. Use of BHS by Children in Medicaid*, by Service Type, 2005, 2008, and 2011

Service Type	% Using Service	# Using Service *	% Using Service	# Using Service *	% Using Service	# Using Service *
	2005		2008		2011	
Outpatient treatment (primarily individual)	53.1%	1,039,827	48.2%	993,580	53.6%	1,390,066
Psychotropic medication	43.8%	857,376	43.7%	900,220	43.7%	1,134,722
Screening/assessment/evaluation	40.9%	801,449	45.2%	929,927	46.9%	1,216,097
Medication management	22.3%	436,698	24.3%	501,330	24.2%	627,703
Family therapy/family education and training	19.4%	379,817	23.2%	477,452	24.4%	632,758
Psychosocial rehabilitation	12.4%	242,052	18.4%	378,598	23.8%	618,522
Substance use outpatient	N/A	N/A	N/A	N/A	1.7%	44,147
Psychological testing	9.3%	182,546	4.5%	93,039	4.4%	113,621
Initial service planning	8.8%	173,194	7.9%	162,905	11.4%	295,148
Case management	8.7%	170,100	9.6%	198,088	6.3%	163,775
Group therapy	7.6%	134,749	8.5%	175,689	8.0%	208,242
Targeted case management	7.1%	138,666	5.6%	115,268	8.3%	215,659
Behavior management consultation and training/therapeutic behavioral support	4.7%	91,764	2.6%	54,316	4.3%	111,732
Residential treatment/therapeutic group homes	3.6%	71,003	4.8%	97,965	4.2%	108,246
Crisis intervention and stabilization (non-ER)	3.5%	68,148	3.6%	73,237	4.3%	112,122
Inpatient psychiatric treatment	3.3%	65,209	3.2%	65,140	5.2%	134,946
Partial hospitalization/day treatment	3.3%	63,806	4.6%	94,303	3.9%	100,536
Mental health consultation	3.1%	60,570	3.5%	71,724	3.3%	86,406
Substance use screening and assessment	2.9%	57,038	3.5%	72,710	1.7%	44,294
Wraparound	1.1%	22,308	1.1%	21,770	1.5%	38,501
Therapeutic foster care	0.8%	14,758	0.9%	17,531	0.5%	11,711
Substance use inpatient/residential	0.3%	5,887	N/A	N/A	0.2%	3,927
Respite	0.2%	4,620	0.3%	5,162	0.2%	5,780
Supported housing	0.2%	3,521	0.2%	4,605	0.3%	7,225
Emergency room	N/A	N/A	6.0%	124,502	6.1%	157,645
Peer services	0.1%	1,495	0.1%	1,976	0.3%	7,437
Home-based (e.g., in-home services)	0.1%	1,193	0.1%	1,756	0.1%	2,157
Activity therapies	0.1%	1,116	0.1%	2,478	0.1%	1,975
Multisystemic Therapy	0.0%**	102	0.1%	1,220	0.1%	3,202
All BHS	**100%**	**1,958,908**	**100%**	**2,059,2822**	**100%**	**2,594,817**

**Counts of children may be duplicated across service categories.*

***Numbers too small to register as percentages.*

Rates of Child BHS Use by Service Type, by Age Groups (Exhibit 8a)

Young children, ages 0-5, had the highest rates of service use compared to other age groups for screening/assessment/evaluation and psychological testing in all three study years. They had the lowest service use rates for all other service types, except family therapy, psychosocial rehabilitation, and therapeutic foster care, where their utilization rates were comparable to or higher than at least one other age group. Among young children, ages 0-5, who used BHS, utilization rates of many service types increased between 2005 and 2011 as follows:

- The outpatient rate of use increased steadily from 36.5% in 2005, to 37.4% in 2008, to 39.4% in 2011, an 8% increase between 2005 and 2011;
- The screening/assessment/evaluation rate increased steadily from 46.4% in 2005, to 50.3% in 2008, to 54.3% in 2011, a 17% increase between 2005 and 2011;
- The family therapy rate increased steadily from 19.7% in 2005, to 24.9% in 2008, to 25.5% in 2011, a 29% increase between 2005 and 2011;
- The psychosocial rehabilitation rate increased steadily, from 12.7% in 2005, to 17.6% in 2008, to 24.1% in 2011, a 90% increase between 2005 and 2011;
- The mental health consultation rate increased steadily from 1.9% in 2005, to 2.5% in 2008, to 2.6% in 2011, a 37% increase;
- After holding steady at 0.7% in 2005 and 2008, the Wraparound rate increased to 1.1% in 2011, a 57% increase;
- After holding steady at 0.1% in 2005 and 2008, the peer services rate doubled to 0.2% in 2011;
- The psychotropic medication rate increased from 14.9% in 2005 to 20.4% in 2008, but then dropped to 18.7% in 2011, still a 26% increase between 2005 and 2011, but an 8% drop from 2008;
- The medication management rate increased from 8.1% in 2005 to 12.2% in 2008 and then dropped to 10.6% in 2011, a 31% increase between 2005 and 2008, but a 13% drop from 2008;
- The group therapy rate increased from 3.7% in 2005 to 5.1% in 2008 and then dropped to 4.5% in 2011, a 22% increase between 2005 and 2011;
- The residential treatment/group care rate increased from 0.4% in 2005 to 1% in 2008 and then went back down to 0.8% in 2011, a 50% increase between 2005 and 2011;
- The non-ER crisis intervention rate increased from 0.9% in 2005 to 1.4% in 2008 and then dropped slightly to 1.3% in 2011, a 31% increase between 2005 and 2011;
- The ER rate went from too small to register in 2005 to 1.6% in 2008 to 1.5% in 2011, a 100% increase between 2005 and 2011, though a slight drop from 2008;
- The TCM rate went from 7.2% in 2005 to 4.6% in 2008 and then back to 7.2% in 2011; and
- The partial hospitalization rate went from 2.7% in 2005 to 4.2% in 2008 and then dropped to 3.2% in 2011, a 16% increase between 2005 and 2011.

Among young children, ages 0-5, who used BHS, utilization rates of some specific services decreased between 2005 and 2011 as follows:

- The psychological testing rate went from 12.1% in 2005 to 5.2% in 2008 and then increased slightly to 5.4% in 2011, a 32% decrease between 2005 and 2011;
- The case management rate increased from 6.3% in 2005 to 7.2% in 2008 and then dropped to 4.1% in 2011, a 35% decrease between 2005 and 2011;
- The behavior management/behavior supports rate went from 4.7% in 2005 down to 2.2% in 2008 and then to 3.5% in 2011, a 26% decrease between 2005 and 2011;
- The inpatient psychiatric hospitalization rate decreased steadily, from 2.9% in 2005, to 2% in 2008, to 1.9% in 2011; and
- The therapeutic foster care rate went from 0.8% in 2005 to 0.9% in 2008 and then dropped to 0.5% in 2005, a 38% decrease between 2005 and 2011.

Children, ages 6-12, had the highest service use rates in all three study years for outpatient and family therapy. In 2008 and 2011, but not in 2005, they also had the highest rates of use for medication management, psychosocial rehabilitation, group therapy, and partial hospitalization, and in 2011, they also had the highest utilization rates for behavior management/behavior supports, Wraparound, and respite, and shared the highest rate with adolescents, ages 13-18 for supported housing and peer support. Their rate of use of psychotropic medications was the highest in 2008 and very close to the psychotropic medication rate of use of adolescents, ages 13-18, who had the highest rates in 2005 and 2011. Children, ages 6-12, had the lowest utilization rate only for therapeutic foster care in all three study years. Among children, ages 6-

12, who used BHS, utilization rates of many service types increased between 2005 and 2011 as follows:

- The outpatient rate increased 5% between 2005 and 2011, from 55.4% to 57.9%, after dropping to 53.1% in 2008;
- The psychotropic medication rate increased 4% between 2005 and 2011, from 47% to 48.8%, a slight drop from 49% in 2008;
- The screening/assessment/evaluation rate increased steadily from 41.9% to 45.7% to 46.9%, a 12% increase between 2005 and 2011;
- The medication management rate increased 14% between 2005 and 2011, from 23.8% to 27.2%, a slight drop from 27.9% in 2008;
- The family therapy rate increased steadily, from 21.7% in 2005, to 26.8% in 2008, to 27.7% in 2011, a 28% increase between 2005 and 2011;
- The psychosocial rehabilitation rate increased steadily, from 11.7% in 2005, to 19.1% in 2008, to 24.1% in 2011, a 106% increase between 2005 and 2011;
- The group therapy rate increased 16% between 2005 and 2011, from 7.6% to 8.8%, although a decrease from the 9.4% rate in 2008;
- The TCM rate increased 29% between 2005 and 2011, from 6.3% to 8.1%, after dropping to 5.7% in 2008;
- The residential treatment/group care rate increased 33% between 2005 and 2011, from 2.1% to 2.8%, a drop from the 3.6% rate in 2008;
- The non-ER crisis stabilization rate increased steadily from 2.4% in 2005 to 2.9% in 2008 to 3.5% in 2011, a 46% increase between 2005 and 2011;
- The inpatient psychiatric hospitalization rate increased steadily, from 1.9% in 2005, to 2.1% in 2008 to 3.7% in 2011, a 95% increase between 2005 and 2011;
- The partial hospitalization rate increased 35% between 2005 and 2011, from 3.1% to 4.2%, a drop from the 5.1% rate in 2008;
- The mental health consultation rate increased 11% between 2005 and 2011, from 3.5% to 3.9%, a drop from the 4.3% rate in 2008;
- The Wraparound rate increased steadily, from 0.7% in 2005, to 1% in 2008, to 1.6% in 2011, a 129% increase between 2005 and 2011;
- The supported housing rate increased 50% between 2005 and 2011, from 0.2% to 0.3%;
- The ER rate increased 3% between 2008 and 2011, from 3.7% to 3.8%;
- The peer services rate tripled between 2005 and 2011, from 0.1% to 0.3%; and
- The MST rate went from too small to register to 0.1%.

Among children, ages 6-12, who used BHS, utilization rates of some specific services decreased as follows:

- The psychological testing rate decreased 54% between 2005 and 2011, from 10.3% to 4.7%;
- The case management rate decreased 31% between 2005 and 2011, from 9.1% to 6.3%, after increasing to 9.9% in 2008;
- The behavior management rate dropped 2% between 2005 and 2011, from 4.7% in 2005 to 4.6% in 2011, after dropping even more to 2.5% in 2008; and
- The therapeutic foster care rate decreased 40% between 2005 and 2011, from 0.5% to 0.3%, after increasing to 0.6% in 2008.

Adolescents, ages 13-18, had the highest rates of use for psychotropic medication (in 2005 and 2011, but not 2008), Substance use screening and assessment, substance use outpatient, substance use inpatient/residential, TCM, case management, residential treatment/group care, inpatient psychiatric hospitalization, non-ER crisis stabilization, ER, therapeutic foster care, and MST. Their utilization rates of more restrictive, expensive services were appreciably higher than those of other age groups, as was their use of all SUD services. For example, in 2011, the inpatient psychiatric utilization rate for adolescents, ages 13-18, was two and a fourth times higher than for children, ages 6-12, the rate for residential treatment/group care was two and a half times higher, and the ER rate was nearly 3 times higher. Adolescents, ages 13-18, had the lowest utilization rates for screening/assessment/evaluation, family therapy, and psychological testing in all three study years, and for psychosocial rehabilitation in 2011 (not in 2005 or 2008). Their rate of use of family therapy in 2011 was 22-28% lower than that of young children, ages 0-5, and children, ages 6-12. Among adolescents, ages 13-18, who used BHS, utilization rates of many service types increased between 2005 and 2011 as follows:

- After holding steady at 47.7% in 2005 and 2008, the psychotropic medication rate increased 3%, to 49% in 2011;
- The screening/assessment/evaluation rate increased steadily from 38.6% in 2005, to 42.4% in 2008, to 43.4% in 2011, a 12% increase between 2005 and 2011;
- The medication management rate increased steadily, from 24.3% in 2005, to 25.6% in 2008, to 26.7% in 2011, a 10% increase between 2005 and 2011;
- The family therapy rate increased steadily, from 17% in 2005, to 18.5% in 2008, to 19.9% in 2011, a 17% increase between 2005 and 2011;
- The psychosocial rehabilitation rate increased steadily, from 12.9% in 2005, to 18% in 2008, to 23.5% in 2011, an 82% increase between 2005 and 2011;
- The group therapy rate increased 1%, from 8.6% in 2005 to 8.7% in 2011, a drop from the 9% rate in 2008;
- The TCM rate increased 15%, from 7.8% in 2005 to 9% in 2011, after falling to 5.9% in 2008;
- The residential treatment/group care rate increased 22% between 2005 and 2011, from 6% to 7.3%, a slight drop from the 7.6% rate in 2008;
- After holding steady at 5.2% in 2005 and 2008, the non-ER crisis stabilization rate increased to 6.7% in 2011, a 29% increase;
- After holding steady at 4.8% in 2005 and 2008, the inpatient psychiatric treatment rate increased to 8.5% in 2011, a 77% increase;
- The partial hospitalization rate increased 6% between 2005 and 2011, from 3.6% to 3.8%, a drop from the 4.2% rate in 2008;
- After holding steady at 1.2% in 2005 and 2008, the Wraparound rate increased to 1.5% in 2011, a 25% increase;
- The supported housing rate increased 50%, from 0.2% in 2005 to 0.3% in 2011;
- The ER rate increased 3% between 2008 and 2011, from 10.5% to 10.8%;
- The peer services rate tripled, from 0.1% in 2005 to 0.3% in 2011; and
- The MST rate increased steadily, from too small to register in 2005, to 0.1% in 2008, to 0.2% in 2011.

Among adolescents, ages 13-18, who used BHS, utilization rates of some specific services decreased as follows:

- The outpatient rate decreased by less than a percent between 2005 and 2011, from 54.9% to 54.8%, after dropping to 47.5% in 2008;
- The psychological testing rate decreased steadily, from 7.7% in 2005, to 4.1% in 2008, to 3.6% in 2011, a 53% decrease between 2005 and 2011;
- The case management rate dropped 18% between 2005 and 2011, from 8.9% to 7.3%, after increasing to 10.3% in 2008;
- The behavior management/behavior supports rate decreased 10% between 2005 and 2011, from 4.8% to 4.3%, after falling to 3% in 2008;
- After holding steady at 3% in 2005 and 2008, the mental health consultation rate dropped to 2.9% in 2011, a 3% decrease; and
- The therapeutic foster care rate decreased from 1% to 0.6% between 2005 and 2011, after increasing slightly to 1.1% in 2008.

Exhibit 8a. Rates of BHS Use for Children in Medicaid, by Service Type, by Age Groups, 2005, 2008, and 2011

Service Type	2005				2008				2011			
	Total N/% of Children	Ages 0 - 5	Ages 6 - 12	Ages 13 - 18	Total N/% of Children	Ages 0 - 5	Ages 6 - 12	Ages 13 - 18	Total N/% of Children	Ages 0 - 5	Ages 6 - 12	Ages 13 - 18
Outpatient treatment (primarily individual)	1,039,827 53.1%	79,362 36.5%	482,015 55.4%	478,450 54.9%	993,580 48.2%	128,235 37.4%	473,943 53.1%	391,402 47.5%	1,390,066 53.6%	173,756 39.4%	677,976 57.9%	538,334 54.8%
Psychotropic medication	857,376 43.8%	32,402 14.9%	409,092 47.0%	415,882 47.7%	900,220 43.7%	69,820 20.4%	437,645 49.0%	392,755 47.7%	1,134,722 43.7%	82,669 18.7%	571,002 48.8%	481,051 49.0%
Screening/assessment/evaluation	801,449 40.9%	100,986 46.4%	364,426 41.9%	336,037 38.6%	929,927 45.2%	172,553 50.3%	408,486 45.7%	348,888 42.4%	1,216,097 46.9%	239,772 54.3%	549,782 46.9%	426,543 43.4%
Medication management	436,698 22.3%	17,653 8.1%	207,163 23.8%	211,882 24.3%	501,330 24.3%	42,013 12.2%	248,702 27.9%	210,615 25.6%	627,703 24.2%	46,933 10.6%	318,093 27.2%	262,677 26.7%
Family therapy/family education and training	379,817 19.4%	42,905 19.7%	188,606 21.7%	148,306 17.0%	477,452 23.2%	85,456 24.9%	239,625 26.8%	152,371 18.5%	632,758 24.4%	112,485 25.5%	324,803 27.7%	195,470 19.9%
Psychosocial rehabilitation	242,052 12.4%	27,733 12.7%	101,850 11.7%	112,469 12.9%	378,598 18.4%	60,437 17.6%	170,185 19.1%	147,976 18.0%	618,522 23.8%	106,421 24.1%	281,704 24.1%	230,397 23.5%
Substance use outpatient	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	44,147 1.7%	278 0.1%	2,254 0.2%	41,615 4.2%
Psychological testing	182,546 9.3%	26,377 12.1%	89,480 10.3%	66,689 7.7%	93,039 4.5%	17,728 5.2%	41,886 4.7%	33,425 4.1%	113,621 4.4%	23,769 5.4%	54,966 4.7%	34,886 3.6%
Initial service planning	173,194 8.8%	15,864 7.3%	81,491 9.4%	75,839 8.7%	162,905 7.9%	21,513 6.3%	75,585 8.5%	65,807 8.0%	295,148 11.4%	44,188 10.0%	139,817 11.9%	111,143 11.3%
Case management	170,100 8.7%	13,624 6.3%	79,250 9.1%	77,226 8.9%	198,088 9.6%	24,848 7.2%	88,811 9.9%	84,429 10.3%	163,775 6.3%	18,160 4.1%	73,834 6.3%	71,781 7.3%
Group therapy	134,749 7.6%	8,045 3.7%	66,078 7.6%	74,626 8.6%	175,689 8.5%	17,439 5.1%	84,253 9.4%	73,997 9.0%	208,242 8.0%	19,776 4.5%	103,375 8.8%	85,091 8.7%
Targeted case management	138,666 7.1%	15,589 7.2%	54,829 6.3%	68,248 7.8%	115,268 5.6%	15,633 4.6%	50,765 5.7%	48,870 5.9%	215,659 8.3%	31,941 7.2%	94,982 8.1%	88,736 9.0%
Behavior management consultation and training/therapeutic behavioral support	91,764 4.7%	8830 4.7%	41,026 4.7%	41,908 4.8%	54,316 2.6%	7446 2.2%	21,915 2.5%	24,955 3.0%	111,732 4.3%	15,322 3.5%	53,820 4.6%	42,590 4.3%
Residential treatment/therapeutic group homes	71,003 3.6%	818 0.4%	18,136 2.1%	52,049 6.0%	97,965 4.8%	3,307 1.0%	31,818 3.6%	62,840 7.6%	108,246 4.2%	3,724 0.8%	33,132 2.8%	71,390 7.3%
Crisis intervention and stabilization (non-ER)	68,148 3.5%	2,064 0.9%	21,176 2.4%	44,908 5.2%	73,237 3.6%	4,768 1.4%	25,834 2.9%	42,635 5.2%	112,122 4.3%	5,836 1.3%	40,586 3.5%	65,700 6.7%
Inpatient psychiatric treatment	65,209 3.3%	6,327 2.9%	16,817 1.9%	42,065 4.8%	65,140 3.2%	6,786 2.0%	18,813 2.1%	39,541 4.8%	134,946 5.2%	8,471 1.9%	43,341 3.7%	83,134 8.5%
Partial hospitalization/day treatment	63,806 3.3%	5,847 2.7%	26,548 3.1%	31,411 3.6%	94,303 4.6%	14,281 4.2%	45,101 5.1%	34,921 4.2%	100,536 3.9%	14,288 3.2%	48,885 4.2%	37,363 3.8%
Mental health consultation	60,570 3.1%	4,062 1.9%	30,572 3.5%	25,936 3.0%	71,724 3.5%	8,598 2.5%	38,220 4.3%	24,906 3.0%	86,406 3.3%	11,590 2.6%	45,985 3.9%	28,831 2.9%
Substance use screening and assessment	57,038 2.9%	3,631 1.7%	14,848 1.7%	38,559 4.4%	72,710 3.5%	7,353 2.1%	17,469 2.0%	47,888 5.8%	44,294 1.7%	715 0.2%	4,265 0.4%	39,314 4.0%
Wraparound	22,308 1.1%	1,546 0.7%	10,037 1.2%	10,725 1.2%	21,770 1.1%	2,398 0.7%	9,216 1.0%	10,156 1.2%	38,501 1.5%	4,872 1.1%	18,435 1.6%	15,194 1.5%
Therapeutic foster care	14,758 0.8%	1,815 0.8%	4,093 0.5%	8,850 1.0%	17,531 0.9%	3,001 0.9%	5,629 0.6%	8,901 1.1%	11,711 0.5%	2,397 0.5%	3,603 0.3%	5,711 0.6%
Substance use inpatient/residential	5,887 0.3%	495 0.2%	2,523 0.3%	2,869 0.3%	N/A	N/A	N/A	N/A	3,927 0.2%	116 0.0%*	62 0.0%*	3,749 0.4%
Respite	4,620 0.2%	241 0.1%	2,266 0.3%	2,113 0.2%	5,162 0.3%	566 0.2%	2,957 0.3%	1,639 0.2%	5,780 0.2%	493 0.1%	3,125 0.3%	2,162 0.2%

Service Type	2005				2008				2011			
	Total N/% of Children	Ages 0 - 5	Ages 6 - 12	Ages 13 - 18	Total N/% of Children	Ages 0 - 5	Ages 6 - 12	Ages 13 - 18	Total N/% of Children	Ages 0 - 5	Ages 6 - 12	Ages 13 - 18
Supported housing	3,521 0.2%	52 0.0%*	1,616 0.2%	1,853 0.2%	4,605 0.2%	166 0.0%*	2,289 0.3%	2,150 0.3%	7,225 0.3%	318 0.1%	3,975 0.3%	2,932 0.3%
Transportation	2,465 0.1%	89 0.0%*	1,171 0.1%	1,205 0.1%	38 0.0%*	7 0.0%*	18 0.0%*	13 0.0%*	291 0.0%*	20 0.0%*	136 0.0%*	135 0.0%*
Emergency room	N/A	N/A	N/A	N/A	124,502 6.0%	5,373 1.6%	33,011 3.7%	86,118 10.5%	157,645 6.1%	6,755 1.5%	44,358 3.8%	106,532 10.8%
Peer services	1,495 0.1%	120 0.1%	651 0.1%	724 0.1%	1,976 0.1%	234 0.1%	804 0.1%	938 0.1%	7,437 0.3%	818 0.2%	3,512 0.3%	3,107 0.3%
Home-based (e.g., in-home services)	1,193 0.1%	22 0.0%*	520 0.1%	651 0.1%	1,756 0.1%	159 0.0%*	733 0.1%	864 0.1%	2,157 0.1%	311 0.1%	994 0.1%	852 0.1%
Activity therapies	1,116 0.1%	43 0.0%*	532 0.1%	541 0.1%	2,478 0.1%	208 0.1%	1,192 0.1%	1,078 0.1%	1,975 0.1%	138 0.0%*	854 0.1%	983 0.1%
Multisystemic Therapy	102 0.0%*	- 0.0%	6 0.0%*	96 0.0%*	1,220 0.1%	1 0.0%*	202 0.0%*	1,017 0.1%	3,202 0.1%	199 0.0%*	709 0.1%	2,294 0.2%
All BHS	**1,958,908 100%**	**217,584**	**869,994**	**871,330**	**2,059,2822 100%**	**342,993**	**892,871**	**823,418**	**2,594,817 100%**	**441,311**	**1,171,232**	**982,274**

**Numbers too small to register as percentages.*

Rates of Child BHS Use by Service Type, by Gender (Exhibit 8b)

Males had higher rates of use than females for nearly two-thirds of the service types in both 2008 and 2011 (Note, 2005 data are not available). They have higher rates of use for: psychotropic medication, medication management, psychosocial rehabilitation, psychological testing, case management, group therapy, TCM, behavior management/behavior supports, residential treatment/group care, partial hospitalization, mental health consultation, Wraparound, respite, supported housing, and all SUD services. The services for which females had higher rates of use were: outpatient, screening/assessment/evaluation, family therapy, non-ER crisis intervention, inpatient psychiatric hospitalization, therapeutic foster care, and ER. The utilization rates were the same for boys and girls for peer services and MST. Among both boys and girls who used BHS, utilization rates of many service types increased between 2008 and 2011. Rates for boys increased for half the service types, as follows:

- The outpatient rate increased 11%, from 47.2% to 52.4%;
- The screening/assessment/evaluation rate increased 4%, from 44.2% to 45.8%;
- The family therapy rate increased 5%, from 23% to 24.1%;
- The psychosocial rehabilitation rate increased 27%, from 19.2% to 24.3%;
- The TCM rate increased 43%, from 6% to 8.6%;
- The behavior management/behavior supports rate increased 140%, from 0.3% to 4.5%;
- The non-ER crisis stabilization rate increased 21%, from 3.4% to 4.1%;
- The inpatient psychiatric hospitalization rate increased 66%, from 2.9% to 4.8%;
- The Wraparound rate increased 45%, from 1.1% to 1.6%;
- The respite rate increased 50%, from 0.2% to 0.3%;
- The supported housing rate increased 50%, from 0.2% to 0.3%;
- The ER rate increased 2%, from 5.3% to 5.4%; and
- The peer services rate tripled, from 0.1% to 0.3%.

Rates for boys decreased between 2008 and 2011 for about a quarter of the services, as follows:

- The psychotropic medication rate decreased slightly, 0.2%, from 47.8% to 47.7%;
- The case management rate decreased 35%, from 10.1% to 6.6%;
- The group therapy rate dropped 4%, from 9.2% to 8.8%;
- The residential treatment/group care rate fell 13%, from 4.8% to 4.2%;
- The partial hospitalization rate dropped 14%, from 5% to 4.3%;

- The mental health consultation rate fell 6%, from 3.6% to 3.4%; and
- The therapeutic foster care rate decreased 50%, from 0.8% to 0.4%.

Rates also increased for girls between 2008 and 2011 for about half the service types, as follows:

- The outpatient rate increased 11%, from 49.9% to 55.3%;
- The psychotropic medication rate increased less than 1%, from 37.8% to 38.1%;
- The screening/assessment/evaluation rate increased 4%, from 46.5% to 48.4%;
- The family therapy rate increased 5%, from 23.5% to 24.8%;
- The psychosocial rehabilitation rate increased 35%, from 17.2% to 23.2%;
- The TCM rate increased 56%, from 5% to 7.8%;
- The behavior management/behavior supports rate increased 127%, from 0.3% to 4.1%;
- The non-ER crisis stabilization rate increased 21%, from 3.9% to 4.7%;
- The inpatient psychiatric treatment rate increased 66%, from 3.5% to 5.8%;
- The Wraparound rate increased 23%, from 1% to 1.3%; and
- The peer services rate tripled, from 0.1% to 0.3%.

Rates decreased for girls for about 30% of the service types, as follows:

- The medication management rate dropped 1%, from 21.1% to 20.8% (though, as noted above, the psychotropic medication rate increased about 1%);
- The psychological testing rate declined 5%, from 4.2% to 4%;
- The case management rate dropped 34%, from 8.9% to 5.9%;
- The group therapy rate fell 9%, from 7.6% to 6.9%;
- The residential treatment/group care rate dropped 13%, from 4.7% to 4.1%;
- The partial hospitalization rate decreased 18%, from 4% to 3.3%;
- The therapeutic foster care rate dropped 38%, from 0.8% to 0.5%; and
- The ER rate fell 1%, from 7.1% to 7%.

Exhibit 8b. Rates of Child BHS Use by Service Type, by Gender, 2008 and 2011

Service Type	2008			2011		
	Total N % of Children	Female	Male	Total N/% of Children	Female	Male
Outpatient treatment (primarily individual)	993,580 48.2%	417,595 49.9%	575,971 47.2%	1,390,066 53.6%	592,583 55.3%	797,459 52.4%
Psychotropic medication	900,220 43.7%	316,351 37.8%	583,856 47.8%	1,134,722 43.7%	408,663 38.1%	726,039 47.7%
Screening/assessment/evaluation	929,927 45.2%	389,415 46.5%	540,462 44.2%	1,216,097 46.9%	519,326 48.4%	696,506 45.8%
Medication management	501,330 24.3%	176,502 21.1%	324,824 26.6%	627,703 24.2%	223,448 20.8%	404,244 26.6%
Family therapy/family education and training	477,452 23.2%	196,769 23.5%	280,679 23.0%	632,758 24.4%	266,024 24.8%	366,717 24.1%
Psychosocial rehabilitation	378,598 18.4%	144,199 17.2%	234,396 19.2%	618,522 23.8%	248,823 23.2%	369,689 24.3%
Substance use outpatient	N/A	N/A	N/A	44,147 1.7%	13,673 1.3%	30,472 2%
Psychological testing	93,039 4.5%	35,324 4.2%	57,714 4.7%	113,621 4.4%	42,779 4.0%	70,839 4.7%
Initial service planning	162,905 7.9%	65,539 7.8%	97,353 8.0%	295,148 11.4%	120,763 11.3%	174,330 11.5%
Case management	198,088 9.6%	74,707 8.9%	123,370 10.1%	163,775 6.3%	63,610 5.9%	100,164 6.6%

Service Type	2008			2011		
	Total N % of Children	Female	Male	Total N/% of Children	Female	Male
Group therapy	175,689 8.5%	63,508 7.6%	112,180 9.2%	208,242 8.0%	73,773 6.9%	134,464 8.8%
Targeted case management	115,268 5.6%	41,739 5.0%	73,522 6.0%	215,659 8.3%	84,038 7.8%	131,585 8.6%
Behavior management consultation and training/therapeutic behavioral support	54,316 2.6%	2,819 0.3%	4,251 0.3%	111,732 4.3%	44,240 4.1%	67,485 4.5%
Residential treatment/therapeutic group homes	97,965 4.8%	39,447 4.7%	58,518 4.8%	108,246 4.2%	44,295 4.1%	63,949 4.2%
Crisis intervention and stabilization (non-ER)	73,237 3.6%	32,281 3.9%	40,953 3.4%	112,122 4.3%	50,063 4.7%	62,053 4.1%
Inpatient psychiatric treatment	65,140 3.2%	29,616 3.5%	35,519 2.9%	134,946 5.2%	62,315 5.8%	72,626 4.8%
Partial hospitalization/day treatment	94,303 4.6%	33,752 4.0%	60,534 5.0%	100,536 3.9%	35,109 3.3%	65,407 4.3%
Mental health consultation	71,724 3.5%	28,039 3.3%	43,682 3.6%	86,406 3.3%	35,083 3.3%	51,323 3.4%
Substance use screening and assessment	72,710 3.5%	26,989 3.2%	45,717 3.7%	44,294 1.7%	14,975 1.4%	29,319 1.9%
Wraparound	21,770 1.1%	8,485 1.0%	13,285 1.1%	38,501 1.5%	14,357 1.3%	24,144 1.6%
Therapeutic foster care	17,531 0.9%	7,611 0.9%	9,919 0.8%	11,711 0.5%	5,206 0.5%	6,505 0.4%
Substance use inpatient/residential	N/A	N/A	N/A	3,927 0.2%	1,016 0.1%	2,911 0.2%
Respite	5,162 0.3%	1,709 0.2%	3,453 0.3%	5,780 0.2%	1,949 0.2%	3,831 0.3%
Supported housing	4,605 0.2%	1,663 0.2%	2,942 0.2%	7,225 0.3%	2,678 0.2%	4,547 0.3%
Transportation	38 0.0%*	13 0.0%*	25 0.0%*	291 0.0%*	112 0.0%*	179 0.0%*
Emergency room	124,502 6.0%	59,521 7.1%	64,977 5.3%	157,645 6.1%	75,105 7.0%	82,535 5.4%
Peer services	1,976 0.1%	770 0.1%	1,206 0.1%	7,437 0.3%	2,902 0.3%	4,535 0.3%
Home-based (e.g., in-home services)	1,756 0.1%	673 0.1%	1,083 0.1%	2,157 0.1%	729 0.1%	1,428 0.1%
Activity therapies	2,478 0.1%	914 0.1%	1,564 0.1%	1,975 0.1%	784 0.1%	1,191 0.1%
Multisystemic Therapy	1,220 0.1%	428 0.1%	792 0.1%	3,202 0.1%	981 0.1%	2,221 0.1%
All BHS	**2,059,2822 100%**	**837,619**	**1,221,562**	**2,594,817 100%**	**1,072,386**	**1,522,127**

**Numbers too small to register as percentages.*

Rate of Child BHS Use by Service Type, by Aid Category (Exhibit 8c)

Children in foster care consistently have had higher rates of service use, in general and for many specific service types, than children on TANF and those on SSI. In 2011, children in foster care had higher rates of use for: outpatient, screening/assessment/evaluation, family therapy, psychological testing, residential treatment/group care, inpatient psychiatric hospitalization, therapeutic foster care, psychosocial rehabilitation, case management, group therapy, and supported housing. In some cases, the differences are notable. For example, children in foster care were three times more likely than other aid categories of children to receive psychological testing, and three times more likely than TANF-enrolled children and 50% more likely than children on SSI/disability to receive residential treatment/group care. The only services that children in foster care were either less likely or as likely to receive as children in general using BHS were: mental health consultation, substance use inpatient/residential, ER, peer support, activity therapy, and MST. Among children in foster care who used BHS, utilization rates of about half the service types increased as follows:

- The rate of use of residential treatment/group care increased steadily across all three study years, from 6.1% of children in foster care who used BHS receiving residential treatment/group care in 2005, to 9% in 2008, to 9.3% in 2011, representing a 52% increase between 2005 and 2011;
- The inpatient psychiatric hospitalization rate increased 49% between 2005 and 2011, from 5.1% to 7.6%, after falling in 2008;
- The psychosocial rehabilitation services rate increased steadily across all three years, from 11.5% of children in foster care receiving this service in 2005, to 16.9% in 2008, to 27.6% in 2011, a 140% increase between 2005 and 2011;
- The family therapy rate increased steadily across all three years, from 20.2% in 2005, to 25.9% in 2008, to 27% in 2011, representing a 34% increase between 2005 and 2011;
- The screening/assessment/evaluation rate increased steadily across the three years, from 41.4% in 2005, to 49.9% in 2008, to 50.3% in 2011, representing a 21% increase between 2005 and 2011;
- Although the overall numbers are small, the rate of use of supported housing increased steadily over the three study years and doubled between 2005 and 2011, from 0.2% to 0.4%;
- The psychotropic medication rate increased slightly, 1%, between 2005 and 2011, from 47.3% to 47.9%, after increasing to 52.1% in 2008;
- The group therapy rate increased 5% between 2005 and 2011, from 9.1% to 9.6%, a drop from the 11.1% rate in 2008;
- The TCM rate increased 12%, from 10% to 11.2%, after dropping to 7.1% in 2008;
- The mental health consultation rate increased 4% between 2005 and 2011, from 2.5% to 2.6%, a drop from the 2.8% rate in 2008;
- The non-ER crisis intervention rate increased 16%, from 4.5% to 5.2%;
- The Wraparound rate increased 67%, from 1.1% to 1.8%; and
- The MST rate increased from too small to register to 0.1%.

There also were decreases in rates of service use for about 20% of service types for the foster care population who used BHS:

- The outpatient services rate declined 6% between 2005 and 2011, from 61.3% of children in foster care who used BHS receiving this specific service in 2005 to 57.9% in 2011;
- The therapeutic foster care rate fell 43% between 2005 and 2011, from 3% of children using this specific service in 2005 to 1.7% in 2011;
- The psychological testing rate went down 12% between 2005 and 2011, from 12.7% to 11.2%;
- The case management rate decreased 4%, from 7.6% to 7.3%;
- The behavioral management/behavior supports rates declined by 15%, from 6.5% to 5.5%;
- The substance use screening and assessment rate fell 28%, from 3.6% to 2.6%; and
- The substance use inpatient/residential rate fell 33%, from 0.3% to 0.2%.

Across all three study years, children on SSI/disability were more likely than their peers to use: psychotropic medications, medication management, partial hospitalization, mental health consultation, respite, and activity therapy. In 2011, in addition to these services, children on SSI/disability also were more likely to use: TCM, behavioral management/behavioral supports, ER and non-ER crisis services, Wraparound, peer support, and MST. Children on SSI/disability who used BHS were

less likely than their peers to use: outpatient, screening/assessment/evaluation, family therapy, substance use screening and assessment, and SUD services. Among children on SSI/disability who used BHS, utilization rates of about half the service types increased as follows:

- The rate of psychotropic medication use increased steadily across the three study years, from 61.2% in 2005, to 63.1% in 2008, to 63.2% in 2011, a 3% increase between 2005 and 2011;
- The rate of medication management also increased steadily, from 30.6% in 2005, to 33.5% in 2008, to 35.1% in 2011, a 15% increase between 2005 and 2011;
- The rate of screening/assessment/evaluation increased steadily, from 34.8% in 2005, to 37.9% in 2008, to 38.7% in 2011, an 11% increase between 2005 and 2011;
- The psychosocial rehabilitation rate increased steadily, from 16.5% in 2005, to 22.8% in 2208, to 25.6% in 2011, a 55% increase between 2005 and 2011;
- The family therapy rate increased steadily, from 17.3% in 2005, to 20.4% in 2008, to 23.3% in 2011, a 35% increase between 2005 and 2011;
- The group therapy rate increased steadily, from 8% in 2005, to 8.8% in 2008, to 9.3% in 2011, a 16% increase between 2005 and 2011;
- The non-ER crisis stabilization service rate increased steadily, from 3.9% in 2005, to 4.1% in 2008, to 5.6% in 2011, a 44% increase between 2005 and 2011;
- The partial hospitalization rate increased 44% between 2005 and 2011, from 4.6% to 6.6%, though it dropped slightly from 6.7% in 2008;
- The inpatient psychiatric hospitalization rate increased 79% between 2005 and 2011, from 3.8% in 2005 to 6.8% in 2011, after holding steady between 2005 and 2008;
- The residential treatment/group care rate increased 20% between 2005 and 2011, from 5% to 6%, though it dropped from a 6.5% rate in 2008;
- The TCM rate increased 33% between 2005 and 2011, from 9.2% in 2005 to 12.2% in 2011, after falling to 8.6% in 2008;
- The outpatient services rate increased 6% between 2005 and 2011, from 46.6% to 49.2%, after falling to 42.2% in 2008; and
- Although the overall numbers are small, the rate of use of peer services went from 0.1% in 2005 to 0.7% in 2011; the activity therapies rate went from 0.2% to 0.3%, and the rate of respite use increased from 0.4% in 2005 to 0.7% in 2011.

There were only two services in which rates of use went down for the SSI/disabled child population between 2005 and 2011:

- The case management rate declined 69% between 2005 and 2011, from 12% to 7.1%, after increasing to 13.8% in 2008; and
- The psychological testing rate declined from 10.4% in 2005 to 4.2% in 2011, a 148% decrease.

There was no specific service for which TANF-enrolled children had higher rates of use than children in general who used BHS. TANF-enrolled children had lower rates of use than children in foster care for every service type, except peer services (0.2% for TANF-enrolled children versus 0.1% for children in foster care in 2011) and substance use residential treatment, where rates of use were the same at 0.2%. TANF-enrolled children had lower rates of use than children on SSI/disability for all service types, except: outpatient, screening/assessment, substance use screening and assessment, substance use inpatient/residential treatment, therapeutic foster care, and family therapy.

Among children on TANF who used BHS, utilization rates of about half the service types increased as follows:

- There was a steady increase across study years in the screening rate, from 42.4% in 2005 to 46.1% in 2008 to 48.2% in 2011, a 14% increase between 2005 and 2011;
- There was a steady increase in the family therapy rate, from 19.8% in 2005 to 23.4% in 2008 to 24.4% in 2011, a 23% increase;
- There was a steady increase in the psychosocial rehabilitation service rate, from 11.5% in 2005 to 17.5% in 2008 to 22.9% in 2011, a 99% increase between 2005 and 2011;
- There was a steady increase in the non-ER crisis stabilization service rate, from 3.1% in 2005 to 3.3% in 2008 to 3.9% in 2011, a 26% increase;
- There was a 2% increase between 2005 and 2011 in the outpatient rate, from 53% to 53.9%, after falling to 48.5% in 2008;

- There was a 0.8% increase in the psychotropic medication use rate between 2005 and 2011, from 37.9% to 38.2%, after falling to 36.9% in 2008;
- There was a 6% increase in the group therapy rate between 2005 and 2011, from 7.1% to 7.5%, though down from 7.9% in 2008;
- There was an 11% increase in the residential treatment/group care rate between 2005 and 2011, from 2.7% to 3%, though down from 3.5% in 2008;
- The inpatient psychiatric hospital rate increased 61% between 2005 and 2011, from 2.8% to 4.5%, after holding steady at 2.8% in 2008;
- The Wraparound rate increased 38% between 2005 and 2011, from 0.8% to 1.1%, after remaining the same at 0.8% in 2008;
- The supported housing rate increased 50% between 2005 and 2011, from 0.2% to 0.3%, after holding steady at 0.2% in 2008;
- The peer services rate doubled, from 0.1% in 2005 to 0.2% in 2011, after holding steady at 0.1% in 2008; and
- The in-home services rate went from 0% (not large enough to register) in 2005 and 2008 to 0.1% in 2011, as did the MST rate.

There were some services where the rate of use fell between 2005 and 2011 for the TANF population:

- The psychological testing rate fell from 8.3% to 3.4%, a 59% decrease;
- The case management rate fell from 8% to 6%, a 25% decrease;
- The behavior management/behavior supports rate fell from 3.8% to 3.7%, a 3% decline;
- The substance use screening and assessment rate declined 42%, from 3.1% to 1.8%;
- The therapeutic foster care rate fell from 0.3% to 0.2%, a 33% decrease; and
- The substance use inpatient/residential rate fell from 0.3% to 0.2%, a 33% decrease.

Exhibit 8c. Rates of Child BHS Use by Service Type, by Aid Category, 2005, 2008, and 2011

Service Type	2005				2008				2011			
	N/% of Children	TANF	Foster Care	SSI/Dis.	N/% of Children	TANF	Foster Care	SSI/Dis.	N/% of Children	TANF	Foster Care	SSI/Dis.
Outpatient treatment (primarily individual)	1,039,827 53.1%	697,466 53.0%	180,144 61.3%	162,217 46.6%	993,580 48.2%	681,069 48.5%	153,180 55.1%	159,331 42.2%	1,390,066 53.6%	1,009,107 53.9%	166,215 57.9%	214,744 49.2%
Psychotropic medication	857,376 43.8%	499,595 37.9%	144,745 49.3%	213,036 61.2%	900,220 43.7%	517,557 36.9%	144,732 52.1%	237,931 63.1%	1,134,722 43.7%	715,493 38.2%	143,214 49.9%	276,015 63.2%
Screening/assessment/evaluation	801,449 40.9%	558,468 42.4%	121,592 41.4%	121,389 34.8%	929,927 45.2%	647,956 46.1%	138,836 49.9%	143,135 37.9%	1,216,097 46.9%	902,644 48.2%	144,420 50.3%	169,033 38.7%
Medication management	436,698 22.3%	248,653 18.9%	81,315 27.7%	106,730 30.6%	501,330 24.3%	297,119 21.2%	77,644 27.9%	126,567 33.5%	627,703 24.2%	389,694 20.8%	84,605 29.5%	153,404 35.1%
Family therapy/family education and training	379,817 19.4%	260,397 19.8%	59,242 20.2%	60,178 17.3%	477,452 23.2%	328,398 23.4%	71,984 25.9%	77,070 20.4%	632,758 24.4%	453,452 24.2%	77,564 27.0%	101,742 23.3%
Psychosocial rehabilitation	242,052 12.4%	150,775 11.5%	33,831 11.5%	57,446 16.5%	378,598 18.4%	245,439 17.5%	47,112 16.9%	86,047 22.8%	618,522 23.8%	427,782 22.9%	79,191 27.6%	111,549 25.6%
Substance use outpatient	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	44,147 1.7%	33,344 1.8%	7,052 2.5%	3,751 0.9%
Psychological testing	182,546 9.3%	108,847 8.3%	37,378 12.7%	36,321 10.4%	93,039 4.5%	45,571 3.2%	32,019 11.5%	15,449 4.1%	113,621 4.4%	62,886 3.4%	32,211 11.2%	18,524 4.2%
Initial service planning	173,194 8.8%	110,920 8.4%	24,766 8.4%	37,508 10.8%	162,905 7.9%	107,597 7.7%	24,250 8.7%	31,058 8.2%	295,148 11.4%	202,276 10.8%	41,068 14.3%	51,804 11.9%
Case management	170,100 8.7%	105,988 8.0%	22,231 7.6%	41,881 12.0%	198,088 9.6%	120,838 8.6%	25,190 9.1%	52,060 13.8%	163,775 6.3%	111,746 6.0%	21,036 7.3%	30,993 7.1%
Group therapy	134,749 7.6%	94,121 7.1%	26,827 9.1%	27,801 8.0%	175,689 8.5%	111,448 7.9%	30,935 11.1%	33,306 8.8%	208,242 8.0%	140,286 7.5%	27,550 9.6%	40,406 9.3%

Service Type	2005				2008				2011			
	N/% of Children	TANF	Foster Care	SSI/Dis.	N/% of Children	TANF	Foster Care	SSI/Dis.	N/% of Children	TANF	Foster Care	SSI/Dis.
Targeted case management	138,666 7.1%	77,093 5.9%	29,404 10.0%	32,169 9.2%	115,268 5.6%	62,975 4.5%	19,679 7.1%	32,614 8.6%	215,659 8.3%	130,364 7.0%	32,090 11.2%	53,205 12.2%
Behavior management consultation and training/therapeutic behavioral support	91,764 4.7%	50,733 3.8%	18,862 6.5%	22,169 6.4%	54,316 2.6%	29,538 2.1%	12,580 4.5%	12,198 3.3%	111,732 4.3%	69,725 3.7%	15,853 5.5%	26,154 6.0%
Residential treatment/therapeutic group homes	71,003 3.6%	35,607 2.7%	17,987 6.1%	17,409 5.0%	97,965 4.8%	48,523 3.5%	24,888 9.0%	24,554 6.5%	108,246 4.2%	55,289 3.0%	26,612 9.3%	26,345 6.0%
Crisis intervention and stabilization (non-ER)	68,148 3.5%	41,397 3.1%	13,183 4.5%	13,568 3.9%	73,237 3.6%	46,004 3.3%	11,906 4.3%	15,327 4.1%	112,122 4.3%	72,713 3.9%	14,915 5.2%	24,494 5.6%
Inpatient psychiatric treatment	65,209 3.3%	37,002 2.8%	15,018 5.1%	13,189 3.8%	65,140 3.2%	38,766 2.8%	11,896 4.3%	14,478 3.8%	134,946 5.2%	83,318 4.5%	21,783 7.6%	29,845 6.8%
Partial hospitalization/day treatment	63,806 3.3%	35,528 2.7%	12,320 4.2%	15,958 4.6%	94,303 4.6%	55,871 4.0%	13,170 4.7%	25,262 6.7%	100,536 3.9%	59,751 3.2%	11,965 4.2%	28,820 6.6%
Mental health consultation	60,570 3.1%	37,144 2.8%	7,367 2.5%	16,059 4.6%	71,724 3.5%	44,485 3.2%	7,670 2.8%	19,569 5.2%	86,406 3.3%	57,090 3.1%	7,377 2.6%	21,939 5.0%
Substance use screening and assessment	57,038 2.9%	40,210 3.1%	10,622 3.6%	6,206 1.8%	72,710 3.5%	50,545 3.6%	14,456 5.2%	7,545 2.0%	44,294 1.7%	32,962 1.8%	7,334 2.6%	3,998 0.9%
Wraparound	22,308 1.1%	10,730 0.8%	3,251 1.1%	8,327 2.4%	21,770 1.1%	11,187 0.8%	5,005 1.8%	5,578 1.5%	38,501 1.5%	20,556 1.1%	5,143 1.8%	12,802 2.9%
Therapeutic foster care	14,758 0.8%	3,306 0.3%	8,918 3.0%	2,534 0.7%	17,531 0.9%	3,729 0.3%	10,442 3.8%	3,360 0.9%	11,711 0.5%	4,069 0.2%	4,915 1.7%	2,727 0.6%
Substance use inpatient/residential	5,887 0.3%	4,495 0.3%	816 0.3%	576 0.2%	N/A	N/A	N/A	N/A	3,927 0.2%	3,269 0.2%	464 0.2%	194 0.0%*
Respite	4,620 0.2%	2,332 0.2%	777 0.3%	1,511 0.4%	5,162 0.3%	1,939 0.1%	907 0.3%	2,316 0.6%	5,780 0.2%	2,120 0.2%	695 0.3%	2,965 0.7%
Supported housing	3,521 0.2%	2,221 0.2%	533 0.2%	767 0.2%	4,605 0.2%	2,870 0.2%	740 0.3%	995 0.3%	7,225 0.3%	4,739 0.3%	1,033 0.4%	1,453 0.3%
Transportation	2,465 0.1%	1,641 0.1%	303 0.1%	521 0.1%	38 0.0%*	6 0.0%*	2 0.0%*	30 0.0%*	291 0.0%*	184 0.0%*	26 0.0%*	81 0.0%*
Emergency room	N/A	N/A	N/A	N/A	124,502 6.0%	78,745 5.6%	16,954 6.1%	28,803 7.6%	157,645 6.1%	108,579 5.8%	17,106 6.0%	31,960 7.3%
Peer services	1,495 0.1%	947 0.1%	211 0.1%	337 0.1%	1,976 0.1%	1,202 0.1%	324 0.1%	450 0.1%	7,437 0.3%	4,147 0.2%	403 0.1%	2,887 0.7%
Home-based (e.g., in-home services)	1,193 0.1%	241 0.0%*	80 0.0%*	872 0.3%	1,756 0.1%	366 0.0%*	607 0.2%	783 0.2%	2,157 0.1%	1,354 0.1%	254 0.1%	549 0.1%
Activity therapies	1,116 0.1%	417 0.0%*	153 0.1%	546 0.2%	2,478 0.1%	729 0.1%	493 0.2%	1,256 0.3%	1,975 0.1%	545 0.0%*	282 0.1%	1,148 0.3%
Multisystemic Therapy	102 0.0%*	95 0.0%*	4 0.0%*	3 0.0%*	1,220 0.1%	955 0.1%	73 0.0%*	192 0.1%	3,202 0.1%	2,357 0.1%	149 0.1%	696 0.2%
All BHS	**1,958,908 100%**	**1,316,635**	**293,885**	**348,338**	**2,059,2822 100%**	**1,404,035**	**277,992**	**377,255**	**2,594,817 100%**	**1,871,430**	**286,845**	**436,542**

** Numbers too small to register as percentages.*

Rates of Child BHS Use by Service Type, by Race/Ethnicity (Exhibit 8d 1 and 2. Note, data are not available for 2005)

In both 2008 and 2011, White children using BHS had the highest rate of use of psychotropic medications at 49%, and medication management at 26%, than any other racial/ethnic group. In 2008, they also had the highest rate of use of non-ER crisis stabilization at 3.9%, and in 2011, the highest rate of use of case management at 7.6%. There was no specific service in either study year for which White children had the lowest rate of use. Between 2008 and 2011, service use rates increased as follows for White children:

- The outpatient service rate for White children increased 14%, from 50.6% in 2008 to 57.5% in 2011;
- The screening/assessment/evaluation rate increased 5%, from 47.3% to 49.8%;
- The family therapy rate increased 6%, from 25.3% to 26.7%;
- The psychosocial rehabilitation service rate increased 26%, from 17.8% to 22.4%;
- The TCM rate increased 21%, from 5.8% to 7%;
- The behavior management/behavior supports rate increased 64%, from 2.5% to 4.1%;
- The non-ER crisis intervention rate increased 13%, from 3.9% to 4.4%;
- The inpatient psychiatric hospitalization rate increased 68%, from 3.1% to 5.2%;
- The Wraparound rate increased 45%, from 1.1% to 1.8%;
- The supported housing rate doubled, from 0.1% to 0.2%;
- The ER rate increased 2%, from 6.4% to 6.5%;
- The peer services rate tripled, from 0.1% to 0.3%; and
- The MST rate went from 0% (too small to register) to 0.1%.

There also were decreases in some service use rates for White children between 2008 and 2011, as follows:

- Psychotropic medication use fell slightly — 0.2% — from 49.3% in 2008 to 49.2% in 2011, as did medication management from 26.5% to 25.8%, a 3% decline;
- The psychological testing rate fell 4%, from 4.7% to 4.5%;
- The case management rate fell 30%, from 10.9% to 7.6%;
- The group therapy rate fell 4%, from 7.5% to 7.2%;
- The residential treatment/group care rate fell 12%, from 4.9% to 4.3%;
- The partial hospitalization rate decreased 15%, from 4% to 3.4%;
- The substance use screening and assessment rate fell 52%, from 3.8% to 1.8%;
- The therapeutic foster care rate fell 38%, from 0.8% to 0.5%;
- The substance use inpatient/residential rate fell 11%, from 1.8% to 0.2%; and
- The activity therapy rate fell 50%, from 0.2% to 0.1%.

There was only one service in both 2008 and 2011 for which BL/AA children had the highest rate of use, which was supported housing: 0.6% of BL/AA children who used behavioral services used supported housing in 2008 and 0.8% in 2011. In 2008, but not in 2011, BL/AA children also had the highest rate of use of psychosocial rehabilitation services, and in 2011, but not in 2008, they had the highest rate of use of partial hospitalization/day treatment. In 2008, BL/AA children had the lowest rate of inpatient psychiatric hospitalization at 3% (compared to children in general at 3.2%); however, this was not the case in 2011, when their hospitalization rate at 5.5% exceeded that of children in general at 5.2%. Between 2008 and 2011, service use rates increased as follows for BL/AA children:

- The outpatient rate for BL/AA children increased 15%, from 47.3% in 2008 to 54.3% in 2011;
- The psychotropic medications rate increased 4%, from 38.1% in 2008 to 39.6% in 2011;
- The screening/assessment/evaluation rate increased 15%, from 43.5% to 49.9%;
- The family therapy rate increased 4%, from 20.4% to 21.2%;
- The psychological testing rate increased 5%, from 4.4% to 4.6%;
- The TCM rate increased 27%, from 5.9% to 7.5%;
- The behavior management/behavior support rate increased 42%, from 2.6% to 3.7%;
- The non-ER crisis stabilization rate increased 23%, from 3.5% to 4.3%;
- The inpatient psychiatric hospitalization rate increased 83%, from 3% to 5.5%;
- The mental health consultation rate increased 10%, from 3.1% to 3.4%;

- The Wraparound rate increased 45%, from 1.1% to 1.6%;
- The supported housing rate increased 33%, from 0.6% to 0.8%;
- The ER rate increased 5%, from 5.6% to 5.9%; and
- The peer services rate went from 0% (too small to capture) to 0.2%.

There also were decreases in some service use rates for BL/AA children between 2008 and 2011, as follows:

- The medication management rate fell 1%, from 23.1% to 22.8%;
- The case management rate fell 20%, from 7.1% to 5.7%;
- The group therapy rate decreased 3%, from 10.5% to 10.2%;
- The residential treatment/group care rate fell 2%, from 4.4% to 4.3%;
- The partial hospitalization rate fell 6%, from 7% to 6.6%; and
- The therapeutic foster care rate fell 56%, from 0.9% to 0.4%.

AI/AN children had the highest rates of service use for many services in both 2008 and 2011, including the most restrictive and expensive service types, specifically: residential treatment/group care (where their rate of use at 8.6% in 2011 was twice that of children in general at 4.2%), psychological testing, substance use screening and assessment, Wraparound, therapeutic foster care (where their rate of use at 1.8% in 2011 was over twice that of children in general at 0.5%), respite, and MST. In 2011, though not in 2008, they also had the highest rate of use of: screening/assessment/evaluation, inpatient psychiatric hospitalization, and ER, and, in 2011, they had the highest rates of: substance use screening and assessment, SUD outpatient, and substance use inpatient/residential. In 2011, but not in 2008, AI/AN children had the lowest rate of use of non-ER crisis stabilization; there was no specific service for which they had the lowest rate of use in 2008. Between 2008 and 2011, service use rates increased as follows for AI/AN children:

- The outpatient rate for AI/AN children increased 23%, from 46.1% in 2008 to 56.6% in 2011;
- The screening/assessment/evaluation rate increased 4%, from 49% to 50.8%;
- The psychosocial rehabilitation rate increased 39%, from 18% to 25.1%;
- The psychological testing rate increased 3%, from 6.9% to 7.1%;
- The TCM rate increased 81%, from 4.3% to 7.8%;
- The behavior management/behavior supports rate increased 85%, from 2% to 3.7%;
- The residential treatment/group care rate increased 4%, from 8.3% to 8.6%;
- The non-ER crisis stabilization rate increased 9%, from 3.3% to 3.6%;
- The inpatient psychiatric hospitalization rate increased 78%, from 4% to 7.1%;
- The Wraparound rate increased 4%, from 4.9% to 5.1%; and
- The MST rate increased 50%, from 0.2% to 0.3%.

There also were decreases in some service use rates for AI/AN children between 2008 and 2011, as follows:

- The psychotropic medication rate fell 2%, from 38.8% to 37.9%;
- The family therapy rate fell 18%, from 25.4% to 20.9%;
- The case management rate fell 48%, from 11.5% to 6%;
- The group therapy rate fell 12%, from 8.4% to 7.4%;
- The partial hospitalization rate fell 17%, from 2.3% to 1.9%;
- The mental health consultation rate fell 46%, from 1.3% to 0.7%;
- The therapeutic foster care rate fell 25%, from 2.4% to 1.8%;
- The respite rate fell 20%, from 0.5% to 0.4%;
- The peer services rate fell 50%, from 0.2% to 0.1%; and
- The activity therapy rate fell 50%, from 0.2% to 0.1%.

There was no specific service for which Asian children had the highest rate of use in either 2008 or 2011. In both study years, they had the lowest rate of use of psychotropic medication at 23.9% in 2008 and 25.8% in 2011, and in 2011, of medication management at 15.1%. Between 2008 and 2011, service use rates increased as follows for Asian children:

- The psychotropic medication rate increased 8%, from 23.9% to 25.8%;
- The screening/assessment/evaluation rate increased 15%, from 34.6% to 39.7%;
- The family therapy rate increased 9%, from 15.5% to 16.9%;
- The psychosocial rehabilitation rate increased 80%, from 16.4% to 29.6%;
- The psychological testing rate increased 12%, from 2.6% to 2.9%;

- The group therapy rate increased 4%, from 8.3% to 8.6%;
- The TCM rate increased nearly 300%, from 2.8% to 11%;
- The behavior management/behavior supports rate increased 79%, from 1.9% to 3.4%;
- The residential treatment/group care rate increased 17%, from 3% to 3.5%;
- The non-ER crisis stabilization rate more than doubled, from 2% to 4.2%;
- The inpatient psychiatric hospitalization rate increased by 44%, from 3.6% to 5.2%;
- The mental health consultation rate increased by 19%, from 3.2% to 3.8%;
- The Wraparound rate increased 125%, from 0.4% to 0.9%;
- The respite rate increased 50%, from 0.2% to 0.3%;
- The supported housing rate went from being too small to register to 0.1%;
- The ER rate increased 10%, from 6% to 6.6%;
- The peer services rate tripled, from 0.1% to 0.3%; and
- The MST rate went from being too small to register to 0.1%.

There also were decreases in some service use rates for Asian children between 2008 and 2011, as follows:

- The outpatient rate fell 6%, from 44.1% to 41.6%;
- The case management rate fell 56%, from 8.6% to 3.8%;
- The partial hospitalization rate decreased 9%, from 3.2% to 2.9%;
- The therapeutic foster care rate fell 67%, from 0.6% to 0.2%; and
- The activity therapy rate fell 50%, from 0.2% to 0.1%.

In 2008, Hispanic/Latino children had the highest rate of use of peer services at 0.3%, which was not the case in 2011, when they had the lowest rate of use of peer services. In 2011, there was no service for which they had the highest rate of use. In both 2008 and 2011, Hispanic/Latino children had the lowest rates of use of several services, including: partial hospitalization, ER, mental health consultation, and Wraparound. In 2008, they had the lowest rate of use of residential treatment and of psychosocial rehabilitation services, but this was not the case in 2011; although their use of residential treatment remained relatively low, use of psychosocial rehabilitation increased measurably, as discussed below. Between 2008 and 2011, service use rates increased as follows for Hispanic/Latino children:

- The family therapy rate increased 2%, from 19.3% to 19.7%;
- The psychosocial rehabilitation rate more than tripled, from 11.2% to 33.9%;
- The TCM rate increased 240%, from 4.3% to 14.6%;
- The behavior management/behavior supports rate increased 72%, from 2.5% to 4.3%;
- The non-ER crisis stabilization rate increased 52%, from 2.5% to 3.8%;
- The inpatient psychiatric hospitalization rate increased 29%, from 3.4% to 4.4%;
- The partial hospitalization rate increased 7%, from 1.4% to 1.5%; and
- The Wraparound rate tripled, from 0.1% to 0.3%.

There also were decreases in many service use rates for Hispanic/Latino children between 2008 and 2011, as follows:

- The outpatient rate decreased 10%, from 40.7% to 36.6%;
- The psychotropic medication rate fell 4%, from 32.5% to 31.1%;
- The screening/assessment/evaluation rate fell 21%, from 44.5% to 35.2%;
- The medication management rate stayed the same at 21.6%;
- The psychological testing rate fell 15%, from 4.6% to 3.9%;
- The case management rate fell 63%, from 10.4% to 3.9%;
- The group therapy rate fell 23%, from 7.4% to 5.7%;
- The residential treatment/group care rate fell 25%, from 2.8% to 2.1%;
- The mental health consultation rate decreased 30%, from 1% to 0.7%;
- The therapeutic foster care rate fell 50%, from 0.4% to 0.2%;
- The respite rate decreased 67%, from 0.3% to 0.1%;
- The ER rate fell 10%, from 5.2% to 4.7%; and
- The peer services rate decreased from 0.3% to too small to register.

In 2008, NH/PI children had the highest rate of use of inpatient psychiatric hospitalization at 5.9% and ER at 10.2%, but this was not the case in 2011, when they had the lowest utilization for psychiatric hospitalization at 3.8% and one of the

lowest rates for ER at 5.1%. In contrast, in 2011, they had the highest rate of use of psychosocial rehabilitation services at 47.7%, TCM at 19.7%, and non-ER crisis stabilization at 5.1%, which could help to explain their lower rates of use of inpatient psychiatric and ER. In both 2008 and 2011, NH/PI children had the lowest rates of use for outpatient and behavior management/behavior supports, and their use of MST was too small to register in either year. In 2011, they also had the lowest rates for screening/assessment/evaluation, family therapy, psychological testing, and residential treatment, in addition to inpatient psychiatric already noted. Between 2008 and 2011, service use rates increased as follows for NH/PI children:

- The outpatient rate increased 4%, from 27.6% to 28.7%;
- The medication management rate increased 38%, from 13.2% to 18.2% (even though the psychotropic medication rate fell 10% as noted below);
- The psychosocial rehabilitation rate increased 165%, from 18% to 47.7%;
- The TCM rate increased 1415%, from 1.3% to 19.7% ;
- The behavior management/behavior supports rate increased 283%, from 0.6% to 2.3%;
- The non-ER crisis stabilization rate increased 143%, from 2.1% to 5.1%;
- The partial hospitalization rate increased 12%, from 2.6% to 2.9%;
- The Wraparound rate increased 150%, from 0.2% to 0.5%;
- The respite rate went from being too small to register to 0.2%; and
- The peer support rate went from being too small to register to 0.2%.

There also were decreases in some service use rates for NH/PI children between 2008 and 2011, as follows:

- The psychotropic medication rate decreased 10%, from 29% to 27.6%;
- The screening/assessment/evaluation rate fell 23%, from 43.8% to 33.6%;
- The family therapy rate fell 16%, from 17.9% to 15.1%;
- The psychological testing rate fell 33%, from 2.4% to 1.6%;
- The case management rate fell 13%, from 6.9% to 6%;
- The group therapy rate decreased 22%, from 9.5% to 7.4%;
- The residential treatment/group care rate fell 38%, from 3.2% to 2%;
- The inpatient psychiatric hospitalization rate fell 36%, from 5.9% to 3.8%;
- The mental health consultation rate decreased 68%, from 7.8% to 2.5%;
- The therapeutic foster care rate fell 50%, from 0.4% to 0.2%; and
- The ER rate fell 50%, from 10.2% to 5.1%.

Hispanic/Latino children of more than one race had the highest utilization rates in both 2008 and 2011 for outpatient, group therapy, and mental health consultation services, and in 2008, also had the highest rate for partial hospitalization. They had the lowest utilization rates in 2011 for psychosocial rehabilitation and therapeutic foster care (also among the lowest for 2008) and TCM, and their use of MST was too small to register in either year. Between 2008 and 2011, service use rates increased as follows for Hispanic/Latino children of more than one race:

- The outpatient rate increased 3%, from 62.7% to 64.7%;
- The screening/assessment/evaluation rate increased 16%, from 37.6% to 43.8%;
- The medication management rate increased 14%, from 13.8% to 15.7% (although the psychotropic medication rate fell 10% as noted below);
- The family therapy rate increased 6%, from 24.2% to 25.6%;
- The psychosocial rehabilitation rate increased 36%, from 14.5% to 19.7%;
- The psychological testing rate increased 9%, from 2.3% to 2.5%;
- The group therapy rate increased 0.9%, from 10.6% to 10.7%;
- The TCM rate increased 33%, from 3.6% to 4.8%;
- The behavior management/behavior supports rate increased 171%, from 1.7% to 4.6%;
- The non-ER crisis stabilization rate increased 47%, from 3.4% to 5%;
- The inpatient psychiatric hospitalization rate increased 23%, from 3.5% to 4.3%;
- The Wraparound rate increased 71%, from 0.7% to 1.2%;
- The respite rate doubled from 0.1% to 0.2%;
- The ER rate increased 4%, from 6.8% to 7.1%; and
- The peer services rate went from being too small to register to 0.6%.

There also were decreases in some service use rates for Hispanic/Latino children of more than one race between 2008 and 2011, as follows:

- The psychotropic medication rate went down 10%, from 36.4% to 32.7%;
- The case management rate fell 52%, from 7.3% to 3.5%;
- The residential treatment/group care rate fell 26%, from 4.7% to 3.5%;
- The partial hospitalization rate fell 38%, from 8.5% to 5.3%;
- The mental health consultation rate decreased 38%, from 16% to 9.9%; and
- The therapeutic foster care rate fell 80%, from 0.5% to 0.1%.

Multiracial children had the highest rates of use for family therapy and Wraparound in both 2008 and 2011. In 2011, they also had the highest rates for use of behavior management/behavior supports and peer support. In 2008, they had the highest rates of use for TCM, which was not the case in 2011, and for residential treatment, which was also one of the highest in 2011. Multiracial children had the lowest utilization rates in both 2008 and 2011 for case management and group therapy, and their use of MST was too small to register in either year. Between 2008 and 2011, service use rates increased as follows for Multiracial children:

- The outpatient rate increased 11%, from 57.7% to 64%;
- The screening/assessment/evaluation rate increased 13%, from 46.3% to 52.4%;
- The medication management rate increased 9%, from 18.6% to 20.2% ;
- The psychosocial rehabilitation rate increased 54%, from 14.7% to 22.6%;
- The TCM rate increased 25%, from 6% to 7.5%;
- The behavior management/behavior supports rate increased over 500%, from 0.9% to 6%;
- The non-ER crisis stabilization rate increased 44%, from 3.4% to 4.9%;
- The inpatient psychiatric hospitalization rate increased 32%, from 3.7% to 4.9%;
- The respite rate increased 50%, from 0.2% to 0.3%; and
- The peer services rate increased 800%, from 0.1% to 0.9%.

There also were decreases in some service use rates for Multiracial children between 2008 and 2011, as follows:

- The psychotropic medication rate fell 8%, from 45% to 41.2%;
- The case management rate fell 52%, from 6% to 2.9%;
- The group therapy rate decreased 21%, from 7.2% to 5.7%;
- The residential treatment/group care rate fell 16%, from 7.5% to 6.3%;
- The partial hospitalization rate declined 39%, from 4.9% to 3%;
- The mental health consultation rate fell 27%, from 7.3% to 5.3%;
- The Wraparound rate fell 14%, from 3.5% to 3%;
- The therapeutic foster care rate decreased 50%, from 0.6% to 0.3%;
- The ER rate fell 18%, from 6.5% to 5.3%; and
- The activity therapy rate fell 60%, from 0.5% to 0.2%.

Exhibit 8d 1. Rates of Child BHS Use by Service Type, by Race/Ethnicity, 2008

Service Type	2008									
	Total N % of Children	White	Black/ African American	American Indian/ Alaska Native	Asian	Hispanic or Latino	Native Hawaiian/ Pacific Islander	Hispanic/ Latino + one/more races	More than one race	Unknown
Outpatient treatment (primarily individual)	993,580 48.2%	513,062 50.6%	255,778 47.3%	15,874 46.1%	5,770 44.1%	94,575 40.7%	904 27.6%	39,828 62.7%	5,621 57.7%	62,168 42.3%
Psychotropic medication	900,220 43.7%	500,148 49.3%	206,374 38.1%	13,369 38.8%	3,126 23.9%	75,519 32.5%	950 29.0%	23,097 36.4%	4,387 45.0%	73,250 49.9%
Screening/assessment/evaluation	929,927 45.2%	479,758 47.3%	235,365 43.5%	16,886 49.0%	4,520 34.6%	103,520 44.5%	1,436 43.8%	23,857 37.6%	4,508 46.3%	60,077 40.9%
Medication management	501,330 24.3%	268,772 26.5%	125,081 23.1%	6,592 19.1%	2,006 15.3%	50,171 21.6%	431 13.2%	8,769 13.8%	1,815 18.6%	37,693 25.7%
Family therapy/family education and training	477,452 23.2%	256,724 25.3%	110,405 20.4%	8,760 25.4%	2,026 15.5%	44,896 19.3%	587 17.9%	15,384 24.2%	2,676 27.5%	35,994 24.5%
Psychosocial rehabilitation	378,598 18.4%	181,108 17.8%	125,300 23.2%	6,190 18.0%	2,142 16.4%	26,137 11.2%	588 18.0%	9,194 14.5%	1,433 14.7%	26,506 18.0%
Psychological testing	93,039 4.5%	48,184 4.7%	23,642 4.4%	2,377 6.9%	340 2.6%	10,582 4.6%	80 2.4%	1,463 2.3%	596 6.1%	5,775 3.9%
Initial service planning	162,905 7.9%	83,557 8.2%	52,691 9.7%	4,051 11.8%	484 3.7%	7,920 3.4%	169 5.2%	2,852 4.5%	614 6.3%	10,567 7.2%
Case management	198,088 9.6%	110,440 10.9%	38,475 7.1%	3,966 11.5%	1,127 8.6%	24,078 10.4%	225 6.9%	4,639 7.3%	581 6.0%	14,557 9.9%
Group therapy	175,689 8.5%	76,265 7.5%	56,831 10.5%	2,879 8.4%	1,088 8.3%	17,146 7.4%	312 9.5%	6,746 10.6%	699 7.2%	13,723 9.3%
Targeted case management	115,268 5.6%	58,895 5.8%	31,662 5.9%	1,488 4.3%	372 2.8%	9,899 4.3%	43 1.3%	2,262 3.6%	583 6.0%	10,064 6.9%
Behavior management consultation and training/therapeutic behavioral support	54,316 2.6%	26,057 2.5%	14,038 2.6%	680 2.0%	244 1.9%	5,943 2.5%	20 0.6%	1,072 1.7%	93 0.9%	6,170 4.2%
Residential treatment/therapeutic group homes	97,965 4.8%	50,113 4.9%	24,049 4.4%	2,873 8.3%	394 3.0%	6,539 2.8%	104 3.2%	2,954 4.7%	732 7.5%	10,207 7.0%
Crisis intervention and stabilization (non-ER)	73,237 3.6%	39,381 3.9%	19,091 3.5%	1,125 3.3%	263 2.0%	5,878 2.5%	69 2.1%	2,158 3.4%	336 3.4%	4,936 3.4%
Inpatient psychiatric treatment	65,140 3.2%	31,857 3.1%	16,132 3.0%	1,377 4.0%	467 3.6%	8,009 3.4%	193 5.9%	2,220 3.5%	360 3.7%	4,525 3.1%
Partial hospitalization/day treatment	94,303 4.6%	40,235 4.0%	37,970 7.0%	805 2.3%	423 3.2%	3,284 1.4%	85 2.6%	5,368 8.5%	480 4.9%	5,653 3.8%
Mental health consultation	71,724 3.5%	32,396 3.2%	16,806 3.1%	440 1.3%	424 3.2%	2,389 1.0%	255 7.8%	10,187 16.0%	708 7.3%	8,119 5.5%
Substance use screening and assessment	72,710 3.5%	38,254 3.8%	17,712 3.3%	2,211 6.4%	328 2.5%	7,700 3.3%	75 2.3%	2,912 4.6%	459 4.7%	3,059 2.1%
Wraparound	21,770 1.1%	11,121 1.1%	6,054 1.1%	1,694 4.9%	47 0.4%	260 0.1%	8 0.2%	443 0.7%	344 3.5%	1,799 1.2%
Therapeutic foster care	17,531 0.9%	8,343 0.8%	4,694 0.9%	815 2.4%	75 0.6%	840 0.4%	12 0.4%	306 0.5%	62 0.6%	2,384 1.6%
Respite	5,162 0.3%	3,304 0.3%	508 0.1%	176 0.5%	30 0.2%	721 0.3%	1 0.0%*	44 0.1%	23 0.2%	355 0.2%
Supported housing	4,605 0.2%	1,260 0.1%	3,166 0.6%	7 0.0%*	5 0.0%*	69 0.0%*	2 0.1%	1 0.0%*	1 0.0%*	94 0.0%*

Service Type	2008									
	Total N % of Children	White	Black/ African American	American Indian/ Alaska Native	Asian	Hispanic or Latino	Native Hawaiian/ Pacific Islander	Hispanic/ Latino + one/more races	More than one race	Unknown
Transportation	38 0.0%	3 0.0%	0 0.0%	0 0.0%	0 0.0%	30 0.0%*	0 0.0%	0 0.0%	0 0.0%	5 0.0%*
Emergency room	124,502 6.0%	65,373 6.4%	30,148 5.6%	2,465 7.2%	780 6.0%	11,995 5.2%	333 10.2%	4,320 6.8%	629 6.5%	8,459 5.8%
Peer services	1,976 0.1%	900 0.1%	184 0.0%*	58 0.2%	10 0.1%	655 0.3%	1 0.0%*	3 0.0%*	8 0.1%	157 0.1%
Home-based (e.g., in-home services)	1,756 0.1%	780 0.1%	372 0.1%	45 0.1%	16 0.1%	233 0.1%	2 0.1%	110 0.2%	26 0.3%	172 0.1%
Activity therapies	2,478 0.1%	1,851 0.2%	170 0.0%*	65 0.2%	22 0.2%	96 0.0%*	2 0.1%	62 0.1%	46 0.5%	164 0.1%
Multisystemic Therapy	1,220 0.1%	367 0.0%*	273 0.1%	56 0.2%	3 0.0%*	432 0.2%	0 0.0%	7 0.0%*	3 0.0%*	79 0.1%
All BHS	**2,059,2822 100%**	**1,014,816**	**541,080**	**34,460**	**13,075**	**232,495**	**3,275**	**63,480**	**9,747**	**146,854**

** Numbers too small to register as percentages.*

Exhibit 8d 2. Rates of Child BHS Use by Service Type, by Race/Ethnicity, 2011

Service Type	2011									
	Total N % of Children	White	Black/ African American	American Indian/ Alaska Native	Asian	Hispanic or Latino	Native Hawaiian/ Pacific Islander	Hispanic/ Latino + one/more races	More than one race	Unknown
Outpatient treatment (primarily individual)	1,390,066 53.6%	706,897 57.5%	326,843 54.3%	20,644 56.6%	7,480 41.6%	121,439 36.6%	1,375 28.7%	76,990 64.7%	15,858 64.0%	112,540 49.2%
Psychotropic medication	1,134,722 43.7%	604,087 49.2%	238,277 39.6%	13,836 37.9%	4,633 25.8%	103,064 31.1%	1,256 26.2%	38,892 32.7%	10,195 41.2%	120,482 52.6%
Screening/assessment/evaluation	1,216,097 46.9%	612,424 49.8%	300,313 49.9%	18,505 50.8%	7,147 39.7%	116,754 35.2%	1,611 33.6%	52,106 43.8%	12,990 52.4%	94,247 41.2%
Medication management	627,703 24.2%	317,393 25.8%	137,234 22.8%	6,928 19.0%	2,711 15.1%	71,653 21.6%	872 18.2%	18,723 15.7%	4,995 20.2%	67,194 29.4%
Family therapy/family education and training	632,758 24.4%	328,086 26.7%	127,447 21.2%	7,607 20.9%	3,033 16.9%	65,396 19.7%	722 15.1%	30,475 25.6%	6,820 27.5%	63,172 27.6%
Psychosocial rehabilitation	618,522 23.8%	275,189 22.4%	133,699 22.2%	9,155 25.1%	5,318 29.6%	112,533 33.9%	2,284 47.7%	23,422 19.7%	5,597 22.6%	51,325 22.4%
Substance use outpatient	44,147 1.7%	19,926 1.6%	10,663 1.8%	1,237 3.4%	333 1.9%	7,059 2.1%	86 1.8%	2,560 2.2%	478 1.9%	1,805 0.8%
Psychological testing	113,621 4.4%	55,488 4.5%	27,501 4.6%	2,572 7.1%	526 2.9%	12,937 3.9%	76 1.6%	3,030 2.5%	1,501 6.1%	9,990 4.4%
Initial service planning	295,148 11.4%	125,145 10.2%	90,247 15.0%	6,058 16.6%	1,670 9.3%	37,480 11.3%	709 14.8%	8,001 6.7%	3,947 15.9%	21,891 9.6%
Case management	163,775 6.3%	93,013 7.6%	34,602 5.7%	2,198 6.0%	689 3.8%	13,092 3.9%	289 6.0%	4,139 3.5%	715 2.9%	15,038 6.6%
Group therapy	208,242 8.0%	88,902 7.2%	61,655 10.2%	2,705 7.4%	1,542 8.6%	18,929 5.7%	356 7.4%	12,748 10.7%	1,422 5.7%	19,983 8.7%

Service Type	2011									
	Total N % of Children	White	Black/ African American	American Indian/ Alaska Native	Asian	Hispanic or Latino	Native Hawaiian/ Pacific Islander	Hispanic/ Latino + one/more races	More than one race	Unknown
Targeted case management	215,659 8.3%	86,503 7.0%	44,945 7.5%	2,838 7.8%	1,973 11.0%	48,414 14.6%	944 19.7%	5,736 4.8%	1,854 7.5%	22,452 9.8%
Behavior management consultation and training/therapeutic behavioral support	111,732 4.3%	49,535 4.1%	21,720 3.7%	1,343 3.7%	599 3.4%	14,049 4.3%	109 2.3%	5,384 4.6%	1,478 6.0%	17,515 7.6%
Residential treatment/therapeutic group homes	108,246 4.2%	53,079 4.3%	25,751 4.3%	3,132 8.6%	637 3.5%	6,823 2.1%	97 2.0%	4,171 3.5%	1,553 6.3%	13,003 5.7%
Crisis intervention and stabilization (non-ER)	112,122 4.3%	53,506 4.4%	26,107 4.3%	1,321 3.6%	748 4.2%	12,611 3.8%	246 5.1%	5,926 5.0%	1,225 4.9%	10,432 4.6%
Inpatient psychiatric treatment	134,946 5.2%	64,254 5.2%	33,175 5.5%	2,593 7.1%	938 5.2%	14,528 4.4%	181 3.8%	5,172 4.3%	1,215 4.9%	12,890 5.6%
Partial hospitalization/day treatment	100,536 3.9%	41,791 3.4%	39,691 6.6%	700 1.9%	526 2.9%	4,840 1.5%	140 2.9%	6,356 5.3%	736 3.0%	5,756 2.5%
Mental health consultation	86,406 3.3%	39,010 3.2%	20,520 3.4%	256 0.7%	682 3.8%	2,389 0.7%	120 2.5%	11,750 9.9%	1,310 5.3%	10,369 4.5%
Substance use screening and assessment	44,294 1.7%	21,864 1.8%	11,046 1.8%	1,305 3.6%	313 1.7%	4,052 1.2%	137 2.9%	2,704 2.3%	450 1.8%	2,423 1.1%
Wraparound	38,501 1.5%	20,055 1.6%	9,914 1.6%	1,857 5.1%	168 0.9%	1,021 0.3%	23 0.5%	1,394 1.2%	745 3.0%	3,324 1.5%
Therapeutic foster care	11,711 0.5%	6,094 0.5%	2,588 0.4%	645 1.8%	41 0.2%	629 0.2%	10 0.2%	135 0.1%	64 0.3%	1,505 0.7%
Substance use inpatient/residential	3,927 0.2%	2,312 0.2%	724 0.1%	198 0.5%	12 0.1%	241 0.1%	8 0.2%	125 0.1%	53 0.2%	254 0.1%
Respite	5,780 0.2%	4,101 0.3%	601 0.1%	155 0.4%	58 0.3%	238 0.1%	8 0.2%	217 0.2%	76 0.3%	326 0.1%
Supported housing	7,225 0.3%	1,900 0.2%	4,926 0.8%	12 0.0%*	9 0.1%	163 0.0%*	3 0.1%	4 0.0%*	2 0.0%*	206 0.1%
Transportation	291 0.0%*	178 0.0%*	42 0.0%*	17 0.0%*	1 0.0%*	16 0.0%*	1 0.0%*	16 0.0%*	18 0.1%	2 0.0%*
Emergency room	157,645 6.1%	79,844 6.5%	35,763 5.9%	2,632 7.2%	1,184 6.6%	15,595 4.7%	246 5.1%	8,454 7.1%	1,315 5.3%	12,612 5.5%
Peer services	7,437 0.3%	3,700 0.3%	910 0.2%	51 0.1%	54 0.3%	133 0.0%*	8 0.2%	746 0.6%	221 0.9%	1,614 0.7%
Home-based (e.g., in-home services)	2,157 0.1%	845 0.1%	886 0.1%	10 0.0%*	3 0.0%*	86 0.0%*	0 0.0%	16 0.0%*	15 0.1%	296 0.1%
Activity therapies	1,975 0.1%	1,442 0.1%	138 0.0%*	33 0.1%	20 0.1%	69 0.0%*	0 0.0%	63 0.1%	60 0.2%	150 0.1%
Multisystemic Therapy	3,202 0.1%	1,193 0.1%	879 0.1%	101 0.3%	22 0.1%	782 0.2%	2 0.0%*	34 0.0%*	6 0.0%*	183 0.1%
All BHS	**2,594,817 100%**	**1,228,951**	**602,129**	**36,460**	**17,983**	**331,780**	**4,790**	**119,048**	**24,775**	**228,901**

** Numbers too small to register as percentages.*

Rates of Child BHS Use by Service Type, by Diagnosis (Exhibit 8e 1 and 2)

Children with ADHD, Conduct Disorder, Mood Disorder, and Anxiety constituted the largest *numbers* of children with diagnoses in both 2008 and 2011 (Note, data are not available for 2005). Consequently, the largest numbers of children using each service type have one of these diagnoses. The numbers of children with diagnoses of PTSD, Developmental Disability, Psychosis, and SUD are, in comparison, much smaller, and do not make up the largest numbers of children using any of the service types (with the exception, of course, of SUD services, where youth with SUD represent the largest numbers). However, if one examines *rates* of service use by diagnosis, children with these diagnoses may have the highest rates of use, even though their numbers are relatively small. In addition, as noted earlier, many children receive more than one diagnosis.

The following describes the top three diagnoses associated with the highest rates of service use for each service type, as well as the largest numbers of service users by diagnostic category for each service type:

- ***Outpatient***. Highest Rates of Use — PTSD, Anxiety, and Mood Disorder in 2011 and 2008 - Children with diagnoses of PTSD, Anxiety, and Mood Disorders had the highest *rates* of outpatient service use in both study years. A little over half (53.6%) of children with any diagnosis used outpatient services in 2011. In comparison, 67.2% of children with PTSD, 63.2% of children with Anxiety, and 62% of children with Mood Disorder used outpatient services. The lowest rate of outpatient use was for children with Developmental Disability at 44.8%. Children with ADHD, the most common diagnosis children received in 2011, constituted the largest *number* of children who used outpatient, making up 41% of the outpatient population.
- ***Psychotropic Medication***. Highest Rates of Use — Psychosis, ADHD, and Developmental Disability in 2011; Psychosis, ADHD, and PTSD in 2008 - Over 80% of children with Psychosis, over 77% of children with ADHD, and nearly 59% of children with Developmental Disability used psychotropic medication in 2011, compared to 43.7% of children in general. Because ADHD is the most common diagnosis and thus the largest group of children with diagnoses, and because this group of children also had high rates of medication use, children with ADHD constituted 64% of all children with diagnoses who used psychotropic medications in 2011. Children with SUD had the lowest rate of use at 43.7%.
- ***Screening/Assessment/Evaluation***. Highest Rates of Use — PTSD, Conduct Disorder, and Mood Disorder in 2011 and 2008 - About 47% of children with diagnoses received screening and assessment services in 2011. In comparison, 55% of children with Conduct Disorder, 54.2% of children with PTSD, and 53.1% of children with Mood Disorder received screening and assessment. Children with SUD had the lowest rate of use at 43.2%. Because of their large numbers, children with ADHD made up the largest segment (39%) of those receiving screening and assessment.
- ***Medication Management***. Highest Rates of Use — Psychosis, ADHD, and PTSD in 2011 and 2008 - About a quarter of children (24.2%) with diagnoses received medication management in 2011. In comparison, half of children with Psychosis, 43% of children with ADHD, and about 35% of children with PTSD used medication management. Because of both their large numbers and high rate of use, children with ADHD represented 64% of children who received medication management in 2011, the same as their representation among those receiving psychotropic medication in 2011. Children with SUD were the least likely to use medication management, at a 22.7% rate of use.
- ***Family Therapy***. Highest Rates of Use — PTSD, Conduct Disorder, and Anxiety in 2011 and 2008 - About a quarter of children with diagnoses received family therapy in 2011, compared to 35% of children with PTSD, 32% of children with Conduct Disorder, and 31% of children with Anxiety. Children with SUD were the least likely to receive family therapy, at a 16.4% rate of use. Because of their large numbers, children with ADHD made up the largest segment (45%) of the population using family therapy in 2011.
- ***Psychosocial Rehabilitation***. Highest Rates of Use — PTSD, Psychosis, and Conduct Disorder in 2011 and 2008 - Less than a quarter of children with diagnoses (23.8%) received psychosocial rehabilitation services in 2011. In comparison, 35% of children with PTSD, 34% of children with Psychosis, and 32% of children with Conduct Disorder used psychosocial rehabilitation. Children with SUD were the least likely to use psychosocial rehabilitation, at a 20.8% rate of use. Because of both their large numbers and high rate of use, children with Conduct Disorder constituted the largest segment (39%) of those using psychosocial rehabilitation in 2011.
- ***Psychological Testing***. Highest Rates of Use — Developmental Disability, ADHD, and PTSD in 2011; PTSD, Developmental Disability, and Anxiety in 2008 - Only

4.4% of children with diagnoses received psychological testing in 2011. In comparison, nearly 10% of children with Developmental Disability (9.8%), 7% of children with ADHD, and 7% of children with PTSD received psychological testing. Because of both their large numbers and high rate of use, children with ADHD constituted the largest segment (59%) of the population receiving psychological testing in 2011. Children with SUD were the least likely to receive psychological testing at a 3.9% rate of use.

- ***Case Management***. Highest Rates of Use — Developmental Disability, Psychosis, and PTSD in 2011 and 2008 - About 6% of children with diagnoses used case management in 2011. In comparison, nearly 13% of children with Developmental Disability and 13% of children with Psychosis received case management, as well as 10.5% of children with PTSD. Children with Anxiety had the lowest rate of use of case management, at 7.3%. Because of their large numbers, children with ADHD represented the largest segment (44%) of those who used case management in 2011.
- ***Group Therapy***. Highest Rates of Use — SUD, Psychosis, and Developmental Disability in 2011; PTSD, SUD, and Conduct Disorder in 2008 – 8% of children with diagnoses used group therapy in 2011. In comparison, nearly 13% of youth with SUD, 11% of those with Psychosis, and 10% of children with Developmental Disability used group therapy. Children with Anxiety were the least likely to use group therapy in 2011 at a 6.6% rate of use. Because of their large numbers, children with ADHD composed the largest segment (40%) of those using group therapy in 2011.
- ***TCM***. Highest Rates of Use — Psychosis, Developmental Disability, and PTSD in 2011 and 2008 - About 8% of children with diagnoses used TCM in 2011. In comparison, nearly 19% of children with Psychosis, 17% of children with Developmental Disability, and nearly 14% of children with PTSD used TCM. The least likely group to use TCM were children with ADHD at 9%. As noted earlier, because ADHD is the most common diagnosis, there are large numbers of children with ADHD who received TCM; even though their rate of TCM use was the lowest among all diagnoses, children with ADHD still made up nearly 40% of the population using TCM in 2011.
- ***Behavior Management/Behavior Supports***. Highest Rates of Use — PTSD, Psychosis, and Conduct Disorder in 2011; PTSD, Developmental Disability, and Conduct Disorder in 2008 - About 4% of children with diagnoses received behavior management/behavior supports in 2011, compared to 8.5% of children with PTSD, 7% of children with Psychosis, and 6% of children with Conduct Disorder. Children with Anxiety had the lowest rate of use of behavior management/behavior support at 4.6%. Both because of their large numbers and high rate of use, children with Conduct Disorder made up the largest segment (45%) of those using behavioral management/behavior support in 2011.
- ***Residential Treatment/Group Care*.** Highest Rates of Use — Psychosis, SUD, and PTSD in 2011; Psychosis, PTSD, and Mood Disorder in 2008 - About 4% of children with diagnoses used residential treatment/group care in 2011. In comparison, nearly a quarter of children with Psychosis used residential treatment/group care, a rate that is over five times higher than that of children in general. About 12% of youth with SUD used residential treatment/group care, a rate that is three times higher, and over 10% of children with PTSD, a rate that is nearly two and a half times higher. Children with ADHD and those with Developmental Disability had the lowest rates of residential treatment/group care use at 4.6% each. However, because ADHD is the most common diagnosis, children with ADHD still represented 40% of the residential treatment/group care population in 2011, even though their rate of residential treatment/group care use was the lowest among all diagnoses. In addition, Mood Disorder is also a common diagnosis, and children with this diagnosis also had a relatively high rate of residential treatment/group care use, 9.7%. Both because of their large numbers and relatively high rate of use, children with Mood Disorder constituted the largest segment (74%) of the residential treatment/group care population in 2011.
- ***Non-ER Crisis Stabilization***. Highest Rates of Use — Psychosis, PTSD, and SUD in 2011; Psychosis, PTSD, and Mood Disorder in 2008 - About 4% of children with diagnoses used non-ER crisis stabilization in 2011. In comparison, over 22% of children with Psychosis used non-ER crisis services, a rate that is five times higher than that of children with other diagnoses; over 9% of children with PTSD and 9% of youth with SUD used non-ER crisis stabilization, a rate that is two times higher than that of other children. Children with Mood Disorder also had a high rate of non-ER crisis stabilization at 8.9%, and because the number of children with Mood Disorder is large, children with this diagnosis comprised 66% of those using non-ER crisis stabilization in 2011. Children with ADHD had the lowest rate of non-ER crisis stabilization use at 4.5%.

- ***Inpatient Psychiatric Hospitalization***. Highest Rates of Use — Psychosis, SUD, and PTSD - About 5% of children with diagnoses used inpatient psychiatric hospitalization. In comparison, nearly 42% of children with Psychosis used inpatient, a rate that is eight times higher than that of children with other diagnoses; over 17% of youth with SUD used inpatient, a rate that is over three times higher, and nearly 15% of children with PTSD, a rate that is over two and a half times higher. Children with Mood Disorder also had a relatively high rate of inpatient use — nearly 14% — and because this is a common diagnosis for children, as well as a high rate of use, children with Mood Disorder constituted the largest segment (85%) of those using inpatient services in 2011. Children with ADHD had the lowest inpatient psychiatric treatment rate of use.
- ***Partial Hospitalization/Day Treatment***. Highest Rates of Use — Psychosis, Conduct Disorder, and PTSD - Slightly less than 4% of children with diagnoses used partial hospitalization/day treatment in 2011. In comparison, 7% of children with Psychosis used this service, a rate that is nearly twice that of other children. Children with Anxiety had the lowest rate of partial hospitalization use at 3.3%. Children with Conduct Disorder were the largest segment (45%) of those using this service in 2011.
- ***Mental Health Consultation***. Highest Rates of Use — ADHD, Conduct Disorder, and Psychosis - Slightly more than 3% of children with diagnoses received mental health consultation services in 2011. In comparison, over 4% of children with ADHD, those with Conduct Disorder, and those with Psychosis used this service. Children with SUD had the lowest rate of mental health consultation use at 1.2%. Because of their large numbers, children with ADHD made up the largest segment (48%) of those using this service in 2011.
- ***Wraparound***. Highest Rates of Use — Developmental Disability, PTSD, and Conduct Disorder - Less than 2% of children (1.5%) used Wraparound in 2011. In comparison, 3.1% of children with Developmental Disability used Wraparound, twice the rate as children in general; 2.8% of children with PTSD used Wraparound, nearly twice the rate, and 2.5% of children with Conduct Disorder. Because of their large numbers and relatively high rate of use, children with Conduct Disorder represented the largest segment (55%) of those using Wraparound in 2011. Children with Anxiety had the lowest rate of Wraparound use in 2011 at 1.5%.
- ***Therapeutic Foster Care***. Highest Rates of Use — PTSD, Psychosis, and Conduct Disorder - Less than 1% (0.5%) of children with diagnoses used therapeutic foster care in 2011. In comparison, 2% of those with PTSD used this service, and 0.9% of those with Psychosis. Because of their large numbers and a relatively high rate of use at 0.7%, children with Conduct Disorder constituted the largest segment of those using this service in 2011. Children with ADHD and those with Developmental Disability had the lowest rates of therapeutic foster care use at 0.5%.
- ***Respite***. Highest Rates of Use — Developmental Disability, PTSD, and Psychosis - A very small percentage of children with diagnoses used respite in 2011 (0.2%). Children with Developmental Disability used this service at a rate (1.6%) that is eight times higher than that of children in general, and they also constituted the largest number of children using respite in 2011, constituting 39% of the respite population. Children with PTSD used respite at a rate (0.6%) that is three times higher than children in general, and 0.4% of children with Psychosis used respite, a rate that is twice as high. Youth with SUD had the lowest rate of respite use at 0.1%.
- ***Supported Housing***. Highest Rates of Use — ADHD, Mood Disorder, and Psychosis - A small percentage (0.3%) of youth with diagnoses used supported housing in 2011. Youth with ADHD had the highest rate of use (0.5%) and were the largest group using this service. Youth with Developmental Disability had the lowest rate of supported housing use (0.1%).
- ***ER***. Highest Rates of Use — Psychosis, SUD, and Anxiety - About 6% of children with diagnoses used the ER in 2011. In comparison, nearly 43% of children with Psychosis used the ER, a rate that is seven times higher than that of children in general; 27% of youth with SUD used the ER, a rate that is over four times higher, and nearly 13% of children with Anxiety used the ER, a rate that is over twice as high. Both because of their large numbers and a relatively high rate of use (12.5%), children with Mood Disorder represented the largest segment of the ER population in 2011. Children with ADHD had the lowest rate of ER use at 5.8%.
- ***Peer Services***. Highest Rates of Use — Psychosis, PTSD, and Developmental Disability - A small percentage of children used peer services in 2011 (0.3%). In comparison, 1.6% of children with Psychosis used peer services, a rate that is five and a half times higher than that of children in general; 1.1% of children with PTSD used peer services, a rate that is nearly four times higher, and 0.6% of

children with Developmental Disability used this service, a rate that is twice as high. Because of their large numbers and a rate that is relatively high (0.5%), children with Mood Disorder constituted the largest group of children using peer services in 2011. No diagnostic group stood out as having the lowest rate of use.

- ***Activity Therapy***. Highest Rates of Use — Developmental Disability and PTSD - A very small percentage of children with diagnoses used activity therapy in 2011 (0.1%). In comparison, 0.3% of children with Developmental Disability used this service, a three times higher rate. Because of their large numbers, children with ADHD were the largest segment using activity therapy in 2011. Youth with SUD were the least likely to use activity therapy, with a rate of use too low to register as a percentage.
- ***MST***. Highest Rates of Use — SUD, Developmental Disability, and Conduct Disorder - A very small percentage of children with diagnoses used MST in 2011 (0.1%). In comparison, 0.5% of youth with SUD used MST, a rate that is five times higher than that of children in general; 0.4% of children with Developmental Disability used MST, a rate that is four times higher, and 0.3% of children with Conduct Disorder used MST, a rate that is three times higher. Both because of their large numbers and high rate of use, children with Conduct Disorder were the largest group to use MST in 2011. Children with ADHD and children with Anxiety had the lowest rates of use at 0.1%.

There were four diagnostic groups of children who often had the highest rates of service use and never had the lowest utilization rates for any of the service types: Conduct Disorder, Mood Disorder, PTSD, and Psychosis. Children with Developmental Disability also often had high utilization rates across services types and only had the lowest rates of use for SUD services, supported housing, and outpatient. Children with Anxiety had high rates of use for several services and the lowest rates of use only for group therapy, partial hospitalization, and Wraparound. Children with ADHD were often the largest segment receiving many service types because of their large numbers among children with diagnoses; however, they had the lowest rates of use for many services: psychosocial rehabilitation (along with youth with SUD), TCM, residential treatment/group care (along with children with development disabilities), non-ER crisis stabilization, inpatient hospitalization, therapeutic foster care (along with children with development disabilities), ER, and MST (along with children with Anxiety). Youth with SUD also had the lowest rates of use for many service types, including: psychotropic medication, medication management, family therapy, psychosocial rehabilitation, psychological testing, mental health consultation, respite, and activity therapy.

Exhibit 8e 1. Rates of Child BHS Use by Diagnosis, 2008

Service Type	2008										
	Total N/% of Children	ADHD	Conduct Disorder	Mood	Anxiety	PTSD	Devel. Disability	Psychosis	SUD Diagnosis	Other Diagnosis	No Diagnosis
Outpatient treatment (primarily individual)	993,580 48.2%	383,298 54.0%	365,194 56.7%	351,856 57.0%	217,151 60.2%	68,251 66.0%	36,642 37.1%	25,746 48.6%	42,957 35.0%	48,933 54.9%	100,232 31.1%
Psychotropic medication	900,220 43.7%	554,165 78.1%	314,813 48.9%	369,017 59.8%	173,366 48.1%	61,993 60.0%	59,128 59.8%	43,561 82.2%	52,017 42.4%	49,882 56.0%	23,315 7.2%
Screening/assessment/evaluation	929,927 45.2%	351,708 49.6%	355,709 55.2%	333,606 54.1%	190,911 53.0%	59,273 57.4%	43,010 43.5%	27,363 51.6%	47,870 39.0%	45,192 50.7%	99,652 30.9%
Medication management	501,330 24.3%	308,070 43.4%	178,681 27.7%	209,934 34.0%	87,607 24.3%	36,023 34.9%	28,869 29.2%	23,116 43.6%	23,163 18.9%	25,683 28.8%	15,273 4.7%
Family therapy/family education and training	477,452 23.2%	205,210 28.9%	205,730 31.9%	170,958 27.7%	111,225 30.9%	37,452 36.2%	21,119 21.4%	11,990 22.6%	15,638 12.7%	24,841 27.9%	28,079 8.7%
Psychosocial rehabilitation	378,598 18.4%	155,761 22.0%	157,389 24.4%	127,190 20.6%	63,162 17.5%	26,124 25.3%	22,398 22.7%	12,739 24.0%	15,761 12.8%	23,007 25.8%	47,632 14.8%
Substance use outpatient	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Psychological testing	93,039 4.5%	50,987 7.2%	47,289 7.3%	42,241 6.8%	27,206 7.5%	9,271 9.0%	8,588 8.7%	3,270 6.2%	5,355 4.4%	7,701 8.6%	578 0.2%
Initial service planning	162,905 7.9%	67,049 9.5%	70,025 10.9%	57,547 9.3%	30,566 8.5%	8,971 8.7%	10,542 10.7%	5,528 10.4%	9,078 7.4%	7,410 8.3%	8,120 2.5%

Service Type	2008										
	Total N/% of Children	ADHD	Conduct Disorder	Mood	Anxiety	PTSD	Devel. Disability	Psychosis	SUD Diagnosis	Other Diagnosis	No Diagnosis
Case management	198,088 9.6%	77,712 11.0%	65,479 10.2%	70,652 11.4%	36,536 10.1%	14,082 13.6%	19,292 19.5%	8,069 15.2%	14,801 12.1%	12,113 13.6%	16,774 5.2%
Group therapy	175,689 8.5%	64,171 9.0%	68,575 10.6%	55,915 9.1%	27,907 7.7%	11,980 11.6%	7,274 7.4%	5,389 10.2%	13,434 10.9%	14,208 15.9%	36,045 11.2%
Targeted case management	115,268 5.6%	53,542 7.5%	48,004 7.5%	43,589 7.1%	19,495 5.4%	8,316 8.0%	18,949 19.2%	5,265 9.9%	6,414 5.2%	9,527 10.7%	906 0.3%
Behavior management consultation and training/therapeutic behavioral support	54,316 2.6%	18,130 2.6%	23,927 3.7%	16,846 2.7%	9,753 2.7%	5,109 4.9%	4,182 4.2%	1,498 2.8%	3,985 3.3%	2,684 3.0%	3,592 1.2%
Residential treatment/therapeutic group homes	97,965 4.8%	38,729 5.5%	49,590 7.7%	71,355 11.6%	24,046 6.7%	12,888 12.5%	5,317 5.4%	15,157 28.6%	13,904 11.3%	10,665 12.0%	4,708 1.5%
Crisis intervention and stabilization (non-ER)	73,237 3.6%	27,632 3.9%	34,865 5.4%	45,258 7.3%	18,052 5.0%	7,622 7.4%	3,522 3.6%	7,647 14.4%	7,665 6.2%	6,807 7.6%	4,964 1.5%
Inpatient psychiatric treatment	65,140 3.2%	27,059 3.8%	35,543 5.5%	52,253 8.5%	27,203 7.5%	11,833 11.5%	3,998 4.0%	13,604 25.7%	14,381 11.7%	10,734 12.0%	753 0.2%
Partial hospitalization/day treatment	94,303 4.6%	39,204 5.5%	43,375 6.7%	30,383 4.9%	14,988 4.2%	6,590 6.4%	5,635 5.7%	4,124 7.8%	5,191 4.2%	5,019 5.6%	12,181 3.8%
Mental health consultation	71,724 3.5%	33,441 4.7%	29,770 4.6%	25,108 4.1%	13,762 3.8%	3,959 3.8%	2,001 2.0%	2,802 5.3%	1,508 1.2%	2,603 2.9%	1,439 0.4%
Substance use screening and assessment	72,710 3.5%	16,533 2.3%	23,720 3.7%	22,387 3.6%	10,641 3.0%	3,487 3.4%	1,651 1.7%	1,848 3.5%	30,248 24.7%	2,788 3.1%	6,585 2.0%
Wraparound	21,770 1.1%	9,378 1.3%	11,508 1.8%	8,392 1.4%	4,247 1.2%	2,064 2.0%	1,862 1.9%	889 1.7%	1,463 1.2%	1,380 1.5%	1,356 0.4%
Therapeutic foster care	17,531 0.9%	6,403 0.9%	8,308 1.3%	7,185 1.2%	3,679 1.0%	3,53 3.4%	714 0.7%	707 1.3%	1,110 0.9%	2,147 2.4%	4,084 1.3%
Substance use inpatient/residential	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Respite	5,162 0.3%	2,253 0.3%	1,683 0.3%	1,879 0.3%	910 0.3%	694 0.7%	1,689 1.7%	244 0.5%	95 0.1%	578 0.6%	110 0.0%*
Supported housing	4,605 0.2%	2,756 0.4%	2,067 0.3%	2,022 0.3%	904 0.3%	226 0.2%	108 0.1%	157 0.3%	194 0.2%	322 0.4%	1 0.0%*
Transportation	38 0.0%*	1 0.0%*	1 0.0%*	2 0.0%*	1 0.0%*	1 0.0%*	0 0.0%	0 0.0%	0 0.0%	0 0.0%	33 0.0%*
Emergency room	124,502 6.0%	40,579 5.7%	54,910 8.5%	79,210 12.8%	52,977 14.7%	12,419 12.0%	6,260 6.3%	21,223 40.0%	31,987 26.1%	15,081 16.9%	56 0.0%*
Peer services	1,976 0.1%	694 0.1%	560 0.1%	749 0.1%	374 0.1%	178 0.2%	164 0.2%	168 0.3%	249 0.2%	155 0.2%	288 0.1%
Home-based (e.g., in-home services)	1,756 0.1%	729 0.1%	788 0.1%	964 0.2%	406 0.1%	189 0.2%	411 0.4%	114 0.2%	89 0.1%	79 0.1%	19 0.0%*
Activity therapies	2,478 0.1%	813 0.1%	792 0.1%	668 0.1%	567 0.2%	436 0.4%	482 0.5%	90 0.2%	140 0.1%	188 0.2%	450 0.1%
Multisystemic Therapy	1,220 0.1%	364 0.1%	1,056 0.2%	569 0.1%	241 0.1%	122 0.1%	16 0.0%*	65 0.1%	252 0.2%	99 0.1%	3 0.0%*
All BHS	**2,059,2822 100%**	**709,512**	**644,288**	**617,080**	**360,490**	**103,343**	**98,794**	**53,010**	**122,696**	**89,120**	**322,196**

** Numbers too small to register as percentages.*

Exhibit 8e 2. Rates of Child BHS Use by Diagnosis, 2011

Service Type	2011										
	Total N/% of Children	ADHD	Conduct Disorder	Mood	Anxiety	PTSD	Devel. Disability	Psychosis	SUD Diagnosis	Other Diagnosis	No Diagnosis
Outpatient treatment (primarily individual)	1,390,066 53.6%	564,952 59.8%	522,222 61.9%	513,822 62.0%	350,737 63.2%	102,831 67.2%	61,997 44.8%	39,089 55.1%	75,825 48.1%	72,095 57.2%	89,609 28.2%
Psychotropic medication	1,134,722 43.7%	730,623 77.4%	392,731 46.6%	469,997 56.8%	252,584 45.5%	83,900 54.8%	81,491 58.9%	56,960 80.3%	68,868 43.7%	63,510 50.4%	22,282 7.0%
Screening/assessment/evaluation	1,216,097 46.9%	474,170 50.2%	463,899 55.0%	439,539 53.1%	290,874 52.5%	82,896 54.2%	64,883 46.9%	37,490 52.8%	68,102 43.2%	61,075 48.5%	118,883 37.4%
Medication management	627,703 24.2%	401,180 42.5%	226,305 26.8%	275,849 33.3%	131,348 23.7%	52,709 34.5%	41,951 30.3%	35,563 50.1%	35,774 22.7%	34,980 27.8%	4,012 1.3%
Family therapy/family education and training	632,758 24.4%	282,012 29.9%	267,426 31.7%	228,694 27.6%	170,683 30.8%	53,261 34.8%	34,343 24.8%	17,338 24.4%	25,885 16.4%	32,742 26.0%	23,141 7.3%
Psychosocial rehabilitation	618,522 23.8%	220,684 23.4%	239,879 28.5%	223,937 27.0%	142,553 25.7%	53,756 35.1%	35,947 26.0%	23,765 33.5%	32,767 20.8%	40,672 32.3%	46,639 14.7%
Substance use outpatient	44,147 1.7%	7,749 0.8%	12,311 1.5%	13,211 1.6%	6,293 1.1%	2,198 1.4%	216 0.2%	1,460 2.1%	40,328 25.6%	1,209 1.0%	19,696 6.2%
Psychological testing	113,621 4.4%	66,865 7.1%	55,745 6.6%	48,389 5.8%	35,269 6.4%	10,643 7.0%	13,571 9.8%	4,344 6.1%	6,134 3.9%	8,807 7.0%	371 0.1%
Initial service planning	295,148 11.4%	118,309 12.5%	127,954 15.2%	109,583 13.2%	64,870 11.7%	22,358 14.6%	17,481 12.6%	11,759 16.6%	14,299 9.1%	17,766 14.1%	11,635 3.7%
Case management	163,775 6.3%	72,271 7.7%	64,961 7.7%	67,208 8.1%	40,523 7.3%	16,047 10.5%	17,776 12.9%	9,054 12.8%	15,704 10.0%	12,849 10.2%	6,773 2.1%
Group therapy	208,242 8.0%	82,771 8.8%	79,812 9.5%	68,639 8.3%	36,789 6.6%	15,003 9.8%	13,855 10.0%	7,704 10.9%	20,019 12.7%	18,965 15.1%	39,037 12.3%
Targeted case management	215,659 8.3%	86,130 9.1%	88,066 10.4%	89,416 10.8%	50,929 9.2%	20,982 13.7%	23,843 17.2%	13,233 18.7%	15,280 9.7%	18,332 14.6%	3,103 1.0%
Behavior management consultation and training/therapeutic behavioral support	111,732 4.3%	45,035 4.7%	50,557 6.0%	40,041 4.8%	25,865 4.6%	13,073 8.5%	6,807 4.9%	5,030 7.1%	7,920 5.1%	6,139 4.9%	3,787 1.2%
Residential treatment/therapeutic group homes	108,246 4.2%	43,798 4.6%	55,095 6.5%	80,243 9.7%	29,908 5.4%	15,729 10.3%	6,344 4.6%	17,303 24.4%	19,426 12.3%	12,500 9.9%	8,147 2.6%
Crisis intervention and stabilization (non-ER)	112,122 4.3%	42,621 4.5%	52,428 6.2%	74,093 8.9%	34,445 6.2%	14,323 9.4%	6,293 4.6%	15,838 22.3%	14,203 9.0%	11,240 8.9%	5,269 1.7%
Inpatient psychiatric treatment	134,946 5.2%	58,656 6.2%	70,003 8.3%	115,356 13.9%	54,048 9.7%	22,573 14.8%	9,269 6.7%	29,613 41.7%	27,265 17.3%	20,233 16.1%	1,414 0.4%
Partial hospitalization/day treatment	100,536 3.9%	44,209 4.7%	45,184 5.4%	33,859 4.1%	18,286 3.3%	7,849 5.1%	6,321 4.6%	4,976 7.0%	6,452 4.1%	5,836 4.6%	16,375 5.1%
Mental health consultation	86,406 3.3%	41,454 4.4%	36,189 4.3%	29,026 3.5%	17,074 3.1%	3,813 2.5%	2,165 1.6%	3,003 4.2%	1,858 1.2%	2,566 2.0%	1,418 0.4%
Substance use screening and assessment	44,294 1.7%	8,789 0.9%	13,343 1.6%	14,606 1.8%	7,778 1.4%	2,883 1.9%	360 0.3%	1,496 2.1%	30,635 19.4%	1,183 0.9%	16,024 5.0%
Wraparound	38,501 1.5%	18,824 2.0%	21,290 2.5%	15,401 1.9%	8,513 1.5%	4,276 2.8%	4,265 3.1%	1,569 2.2%	2,516 1.6%	2,539 2.0%	1,639 0.5%
Therapeutic foster care	11,711 0.5%	4,954 0.5%	6,275 0.7%	5,654 0.7%	3,114 0.6%	3,088 2.0%	650 0.5%	606 0.9%	1,138 0.7%	1,682 1.3%	2,183 0.7%
Substance use inpatient/residential	3,927 0.2%	712 0.1%	993 0.1%	1,311 0.2%	586 0.1%	180 0.1%	9 0.0%*	144 0.2%	3,797 2.4%	160 0.1%	1,817 0.6%
Respite	5,780 0.2%	2,081 0.2%	2,021 0.2%	1,740 0.2%	1,350 0.2%	859 0.6%	2,278 1.6%	296 0.4%	143 0.1%	599 0.5%	416 0.1%

Service Type	2011										
	Total N/% of Children	ADHD	Conduct Disorder	Mood	Anxiety	PTSD	Devel. Disability	Psychosis	SUD Diagnosis	Other Diagnosis	No Diagnosis
Supported housing	7,225 0.3%	4,473 0.5%	2,883 0.3%	3,563 0.4%	1,360 0.2%	355 0.2%	151 0.1%	276 0.4%	357 0.2%	341 0.3%	1 0.0%*
Transportation	291 0.0%*	130 0.0%*	161 0.0%*	198 0.0%*	80 0.0%*	40 0.0%*	24 0.0%*	34 0.0%*	32 0.0%*	29 0.0%*	15 0.0%*
Emergency room	157,645 6.1%	55,223 5.8%	69,638 8.3%	103,907 12.5%	71,644 12.9%	17,925 11.7%	8,945 6.5%	30,349 42.8%	42,561 27.0%	20,709 16.4%	11,334 3.6%
Peer services	7,437 0.3%	3,540 0.4%	3,009 0.4%	4,246 0.5%	2,496 0.5%	1,647 1.1%	792 0.6%	1,110 1.6%	623 0.4%	647 0.5%	178 0.1%
Home-based (e.g., in-home services)	2,157 0.1%	1,311 0.1%	1,299 0.2%	726 0.1%	353 0.1%	144 0.1%	89 0.1%	61 0.1%	90 0.1%	152 0.1%	40 0.0%*
Activity therapies	1,975 0.1%	598 0.1%	576 0.1%	497 0.1%	485 0.1%	279 0.2%	467 0.3%	83 0.1%	71 0.0%	149 0.1%	494 0.2%
Multisystemic Therapy	3,202 0.1%	1,188 0.1%	2,308 0.3%	1,345 0.2%	516 0.1%	299 0.2%	529 0.4%	113 0.2%	722 0.5%	201 0.2%	68 0.0%*
All BHS	**2,594,817 100%**	**944,452**	**843,041**	**828,153**	**554,560**	**152,991**	**138,298**	**70,951**	**157,764**	**125,980**	**318,292**

** Numbers too small to register as percentages.*

Highlights and Implications of the Data

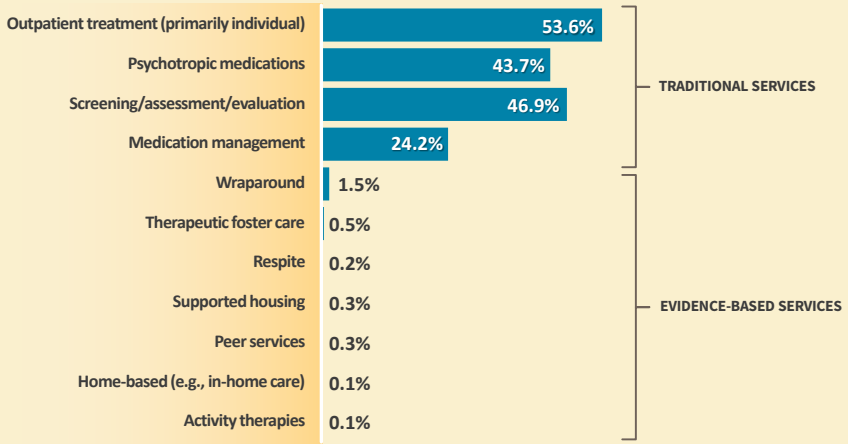
Total Child Population Using BHS

- In 2011, psychosocial rehabilitation services were added to the list of "most frequently used" services (defined as used by 20% or more of children) for the first time, joining outpatient, screening, psychotropic medication, medication management, and family therapy. About a quarter of children who used BHS used psychosocial rehabilitation in 2011, a 90% increase from 2005.
- The percentage of children receiving screening/assessment/evaluation has increased in every year, to 47% of children in 2011.
- About half of children used outpatient, and about a quarter used family therapy in 2011 (up from 19% in 2005).
- About 44% of children received psychotropic medication, but only 24% received medication management.
- Use of non-traditional services — Wraparound, peer support, supported housing, and MST — all increased but remained low (less than 2% in each case, although this is understated given that some states may be coding these services as psychosocial rehabilitation or, in the case of Wraparound, as TCM).
- Use of residential treatment/group care and inpatient psychiatric hospitalization increased between 2005 and 2011, from 3.6% to 4.2% of children using residential, and from 3% to 5% of children using inpatient psychiatric.
- Use of therapeutic foster care decreased from 0.8% in 2005 to 0.5% in 2011.
- ER use remained stable at 6% of children using ER, while use of non-ER crisis stabilization increased from 3.5% to 4.3%.
- In 2011, more children (8%) used TCM than case management (6%).

The increases in screening and use of HCBS are encouraging, given the preponderance of studies showing their effectiveness relative to more traditional office-based and facility-based services, as well as federal guidance on the importance of these services in the Medicaid benefit for children. [19] At the same time, use of evidence-based practices like MST and Wraparound, and emerging best practices like peer support, remains very low (**chart 7**). Additionally, the increases in use of residential and hospital care, while use of therapeutic foster care has declined, are concerning from both a cost and quality standpoint. The increased use of non-ER crisis services, while ER use has remained stable, may suggest that states are exploring use of "newer generation" crisis models, such as Mobile Response and Stabilization Services (used, for example, in Connecticut, New Jersey, Washington state, and Wisconsin). The increase in use of TCM is no doubt partially attributable to

more flexible federal policy on TCM, as well as the possibility that states are using TCM to support more intensive and customized care coordination approaches for children with serious behavioral health challenges such as Wraparound. The low percentage of children receiving medication management relative to the percent receiving psychotropic medication has been of concern throughout all three study years.

Chart 7. Use of Traditional Behavioral Health Services vs. Evidence-Based Services, 2011



Service Use by Age Groups and Gender

- Young children, ages 0-5, had the highest utilization rates for screening/assessment/evaluation and psychological testing, but the lowest rates of use for most other service types, despite experiencing increases in use of most service types between 2005 and 2011. Notable increases included a 90% rise in use of psychosocial rehabilitation, from 12.7% in 2005 to 24.1% in 2011. About 19% of young children using BHS received psychotropic medications in 2011, up from 15% in 2005.
- Children, ages 6-12, had the highest utilization rates for most HCBS and experienced increases in utilization of most services. Notable increases included a 100% plus increase in use of psychosocial rehabilitation, from 11.7% in 2005 to 24.1% in 2011, a 95% increase in the use of inpatient psychiatric treatment, from 1.9% to 3.7%, and use of peer services tripled, from 0.1% to 0.3%, though the numbers using this service were very small. Forty-eight percent of this age group were on psychotropic medications in 2011, up from 47% in 2005.
- Utilization rates of more restrictive, expensive services were appreciably higher for adolescents, ages 13-18, than other age groups, as was their use of all SUD services. In 2011, the inpatient psychiatric utilization rate for adolescents was two and a fourth times higher than for children, ages 6-12, the rate for residential treatment/group care was two and a half times higher, and the ER rate was nearly three times higher. Adolescents also had the highest rate of psychotropic medication use at 49% (up from 47.7% in 2005), though not much different from the 6-12-year-old rate. Adolescents had the lowest utilization rates in 2011 for screening/assessment/evaluation, family therapy, psychological testing, and psychosocial rehabilitation, despite an 82% increase in use of psychosocial rehabilitation between 2005 and 2011, from 12.9% to 23.5%. Other notable increases included a 77% increase in use of inpatient psychiatric treatment, a tripling in use of peer services (though numbers are very small), and an increase in MST from too small to register in 2005 to 0.2% in 2011, with, again, overall numbers being very small.
- Boys who used BHS had higher rates of use than females for two-thirds of the service types, including residential treatment/group care, psychotropic medication, and all SUD services. Their utilization rate for psychotropic medication at nearly 48% is 25% higher than that of females at 38%. On the other hand, females had higher rates of ER and inpatient psychiatric treatment rates.

As screening rates continue to increase, particularly for young children, ages 0-5, it will be important for states to track access to services, which appears to be relatively low for young children, despite gains. The disproportionate use of more restrictive, expensive services by adolescents, and their lower use of family therapy and psychosocial rehabilitation, suggests a need for a more intentional focus on this population to ensure use of effective practices and to achieve better cost outcomes. As noted earlier, the increased use of psychotropic medication among all age groups, including young children, ages 0-5, and particularly among boys, indicates the importance of continued efforts to ensure appropriate medication use.

Service Use by Aid Category

- Children in foster care have the highest rates of BHS use in general and for many service types, both more restrictive and HCBS. In 2011, they were three times more likely than TANF-enrolled children and one and a half times more likely than children on SSI/disability to receive residential treatment/group care, and their use of residential treatment/group care increased 52% from 2005 to 2011, from 6.1% to 9.3%. They have the highest inpatient psychiatric treatment rate, which increased 49%, from 5.1% to 7.6%. They also, however, have the highest rates of use of outpatient, psychosocial rehabilitation, respite, and family therapy, among others. Their rate of use of psychosocial rehabilitation increased 140% between 2005 and 2011, from 11.5% to 27.6%. About 47% of children in foster care received psychotropic medication, a higher rate than that of TANF-enrolled children, but not nearly as high as children on SSI.
- Children on SSI/disability had the highest psychotropic medication rates at 63.2% in 2011 and ER utilization rates at 7.6%, as well as the highest rates for services often provided through waiver programs, such as respite, activity therapy, peer support, and TCM. This population had the lowest utilization rates for outpatient and family therapy, and for all SUD services.
- There was no specific service for which TANF-enrolled children had higher rates of use than children in general who used BHS.

Over the past decade, a growing body of evidence-based and best practices have emerged for children with serious behavioral health challenges, including those in foster care, virtually all of which are home and community-based: for example, MST, Trauma-Focused Cognitive Behavioral Therapy, Parent-Child Interaction Therapy, Wraparound, newer-generation Mobile Response and Stabilization models, to name just a few. Expanded use of effective home- and community-based practices can help to reduce reliance on psychiatric inpatient, ER, and residential care. The relatively high behavioral health utilization rates of the foster care population argue for more effective partnerships among child welfare, Medicaid, and behavioral health authorities to design and implement delivery systems that encompass best practices for this population.

Service Use by Race/Ethnicity

- White children using BHS in 2011 had the highest rates of use of psychotropic medication at 49%, and medication management at 26%, than any other racial/ethnic group. There was no specific service for which White children had the lowest rate of use. Among notable changes in service use between 2008 and 2011, the inpatient psychiatric treatment utilization rate for White children increased 68%, from 3.1% to 5.2%, while use of residential treatment/group care fell 12% from 4.9% to 4.3%. Use of psychosocial rehabilitation increased 26%, from 17.8% to 22.4%. Use of psychotropic medication remained roughly the same at 49%.
- BL/AA children had the highest rates of use in 2011 of partial hospitalization/day treatment and of supported housing, although the numbers of youth in general using supported housing were very small. In 2008, BL/AA children had the lowest rate of inpatient psychiatric hospitalization at 3% (compared to children in general at 3.2%); however, this was not the case in 2011, when their hospitalization rate at 5.5% exceeded that of children in general at 5.2% (although it was not the highest among all racial/ethnic groups). While the inpatient psychiatric treatment rate increased 83% for BL/AA children between 2008 and 2011, use of residential treatment/group care fell 2%, from 4.4% to 4.3%. Use of psychosocial rehabilitation also fell slightly, from 23.2% to 22.2%. Use of psychotropic medications increased 4%, from 38.1% to 39.6%.
- AI/AN children had the highest rates of service use for many services in 2011, including the most restrictive and expensive service types, specifically: residential treatment/group care (where their rate of use at 8.6% was twice that of children in general at 4.2%), inpatient psychiatric hospitalization (where their rate of use at 7.1% was 37% higher than children in general at 5.2%), and ER (where their utilization rate was 18% higher at 7.2% than children in general at 6.1%). AI/AN children also had the highest utilization rates for all SUD services, psychological testing, therapeutic foster care (where their rate of use at 1.8% in 2011 was over twice that of children in general at 0.5%), respite, Wraparound, and MST. The only service in 2011 for which AI/AN children had the lowest rate of use was non-ER crisis stabilization. Utilization rates for inpatient psychiatric treatment for AI/AN children increased 78%, residential treatment increased 4%, and psychosocial rehabilitation increased 39%, from 18.1% to 25.1%. The psychotropic medication utilization rate fell 2%, from 38.8% to 37.9%.
- There was no specific service for which Asian children had the highest rate of use in either 2008 or 2011. In both study years, they had the lowest rate of use of psychotropic medication, despite an 8% increase in the medication utilization

rate between 2008 and 2011, from 23.9% to 25.8%. The inpatient psychiatric treatment utilization rate for Asian children increased 44% between 2008 and 2011, from 3.6% to 5.2%; the residential treatment/group care rate also increased, from 3-3.5%. Use of psychosocial rehabilitation increased 80%, from 16.4% to 29.6%, and the TCM utilization rate jumped 300%, from 2.8% to 11%.

- In 2011, there was no specific service for which Hispanic/Latino children had the highest rate of use. However, Hispanic/Latino children had the lowest rates of use of several services in 2011, including: partial hospitalization, ER, mental health consultation, peer services, and Wraparound. There were some notable increases in service use rates for Hispanic/Latino children between 2008 and 2011, with use of psychosocial rehabilitation more than tripling, from 11.2% to 33.9%, a 240% increase in use of TCM, from 4.3% to 14.6%, and a 29% increase in inpatient psychiatric treatment use, from 3.4% to 4.4%. Use of residential treatment/group care fell 25%, from 2.8% to 2.1%, and there was a 4% decrease in psychotropic medication use, from 32.5% to 31.1%.
- In 2008, NH/PI children had the highest rate of use of inpatient psychiatric hospitalization at 5.9% and ER at 10.2%, but this was not the case in 2011, where they had the lowest utilization for psychiatric hospitalization at 3.8% and one of the lowest rates for ER at 5.1%. In 2011, they had the highest rate of use of psychosocial rehabilitation services at 47.7%, TCM at 19.7%, and non-ER crisis stabilization at 5.1%, which could help to explain their lower rates of use of inpatient psychiatric and ER. In both 2008 and 2011, NH/PI children had the lowest rates of use for outpatient and behavior management/behavior supports, and their use of MST was too small to register in either year. In 2011, they also had the lowest rates for screening/assessment/evaluation, family therapy, psychological testing, and residential treatment, in addition to inpatient psychiatric already noted. Notable increases in utilization rates between 2008 and 2011 included a 165% increase in the rate of use of psychosocial rehabilitation, from 18-47.7%; a 1415% increase in use of TCM, from 1.3% to 19.7%, and a 150% increase in use of Wraparound, from 0.2% to 0.5%, although the numbers are very small. Use of inpatient psychiatric treatment fell 36%; use of residential treatment/group care decreased 38%, from 3.2% to 2%; ER use fell 50%, from 10.2% to 5.1%, and use of psychotropic medication decreased 10%, from 29% to 27.6%.
- Hispanic/Latino children of more than one race had the highest utilization rates in both 2008 and 2011 for outpatient, group therapy, and mental health consultation services. They had the lowest utilization rates in 2011 for psychosocial rehabilitation, despite a 36% increase in the rate of use, from 14.7% to 19.7%, and the lowest rate for therapeutic foster care (also among the lowest for 2008) and TCM, and their use of MST was too small to register in either year. Notable increases in rates of use also included behavior management/behavior supports, which increased 171%, from 1.7% to 4.6%, and inpatient psychiatric treatment, which increased 23%, from 3.5% to 4.3%. Use of residential treatment/group care decreased 26%, from 4.7% to 3.5%, as did use of psychotropic medication by 10%, from 36.4% to 32.7%.
- Multiracial children had the highest rates of use for family therapy and Wraparound in both 2008 and 2011. In 2011, they also had the highest rates for use of peer support and behavior management/behavior supports, which increased over 500% from 2008 to 2011, from 0.9% to 6%. Multiracial children had the lowest utilization rates in both 2008 and 2011 for case management and group therapy, and their use of MST was too small to register in either year. Notable increases between 2008 and 2011 also included a 54% increase in the psychosocial rehabilitation rate, from 14.7% to 22.6%, and a 32% increase in the inpatient psychiatric treatment rate, from 3.7% to 4.9%. Use of residential treatment/group care fell 16%, from 7.5% to 6.3%, as did use of psychotropic medication by 8%, from 45% to 41.2%.

There are both subtle and not-so-subtle differences in use of particular types of services based on race/ethnicity. AI/AN children, for example, clearly are at greater risk for use of restrictive services such as inpatient psychiatric treatment and residential treatment and for use of substance use services. Throughout the study years, White children consistently have used psychotropic medication at higher rates than other racial/ethnic groups of children. NH/PI children were the only cohort that experienced decreased rates of use of inpatient and residential treatment between 2008 and 2011, and, interestingly, they had the highest rates of use of services that can serve to reduce use of facility-based care, namely, psychosocial rehabilitation, TCM, and non-ER crisis alternatives. Most cohorts experienced increased rates of inpatient psychiatric hospitalization and decreased rates of use for residential treatment; this was not the case for AI/AN or Asian children, however, who experienced increased utilization rates of both. Two cohorts — BL/AA and Asian

children — experienced increased rates of psychotropic medication use between 2008 and 2011, while all other racial/ethnic groups had decreased use, or, in the case of White children, the rate stayed the same. All racial/ethnic groups of children experienced increased psychosocial rehabilitation utilization rates, except for BL/AA children, whose rate of use decreased between 2008 and 2011. The variation in service use based on race/ethnicity needs to be followed more closely over time and analyzed in greater depth to ascertain, in some cases, which differences are significant as well as factors that may contribute to differences.

Service Use by Diagnosis

- Over 80% of children with Psychosis, over 77% of children with ADHD, and nearly 59% of children with Developmental Disability used psychotropic medication in 2011, compared to 43.7% of children in general.
- Because ADHD is the most common diagnosis and thus the largest group of children with diagnoses, and because this group of children had high rates of medication use, children with ADHD constituted 64% of all children with diagnoses who used psychotropic medication in 2011.
- Children with ADHD were often the largest segment receiving many service types because of their large numbers among children with diagnoses; however, they had the lowest rates of use for many services.
- There were four diagnostic groups of children who often had the highest rates of service use and never had the lowest utilization rates for any of the service types: Conduct Disorder, Mood Disorder, PTSD, and Psychosis.
- Children with Psychosis had the highest utilization rates for all facility-based care, including inpatient hospitalization, residential treatment/group care, and ER.

Using diagnosis can assist states only to a point with identifying cohorts of children at elevated risk for use of facility-based care and for psychotropic medication. In many cases, the largest numbers of children using these service types and medication do not have the highest rates of use. For example, children with Psychosis have inpatient psychiatric hospitalization rates that are eight times higher than that of children with other diagnoses, but they do not constitute the largest cohort of children using inpatient because their overall numbers are relatively small among children with diagnoses. In contrast, children with Mood Disorder constitute the largest number of children receiving inpatient psychiatric treatment, even though their rate of inpatient psychiatric treatment use is three times lower than that of children with Psychosis. Similarly, even though their rate of residential treatment/group care use was the lowest among all diagnoses, children with ADHD still represented 40% of the residential treatment/group care population in 2011 because ADHD is the most frequently assigned diagnosis. Also, children tend to receive more than one diagnosis. For children, behavioral health diagnosis alone is not a reliable means for states to identify populations requiring customized approaches such as health homes.

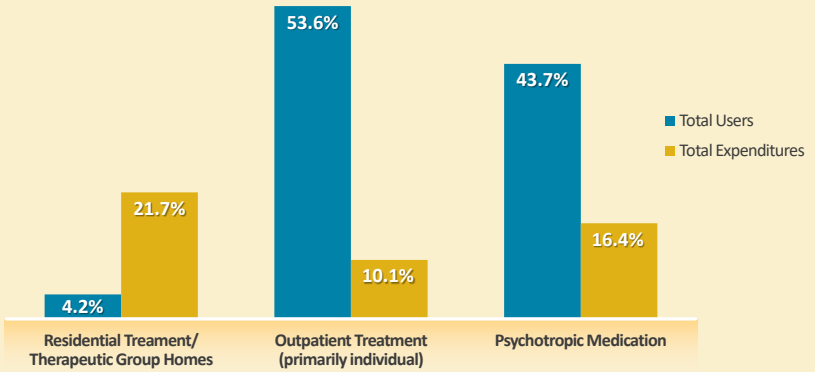
Behavioral Health Expenditures by Service Type

What the Data Show

Total Child Behavioral Health Expenditures by Service Type (Exhibit 9 and Chart 8)

Exhibit 9 shows total expenditures across the study years by service type, as well as percentage of children using each service. Across the study years, residential treatment/group care has remained the single largest expenditure item, with a 13% increase in share of total spending between 2005 and 2011. In 2011, nearly 22% of total spending was on residential treatment/group care ($2.5 billion), up from 19.2% in 2005, for 4.2% of children receiving BHS, up from 3.6% in 2005. Psychotropic medication also was a top-three expenditure item across all three study years, representing 16.4% of total expense in 2011 ($1.9 billion), up from 13.5% of total expense in 2005, for about 44% of children receiving BHS in all three study years. Outpatient was a top-three expense item in 2005, but not in 2008 or 2011. Instead, psychosocial rehabilitation joined the list of top-three expenditure items in 2011, representing 18.6% of total expense in 2011 ($2.1 billion) for 23.8% of children receiving BHS (up from 10.3% of total expense in 2005 for 12.4% of children using BHS). The increase in total expense for psychosocial rehabilitation is attributable entirely to the increase in utilization of this service type, rather than to increased cost as mean expense for psychosocial rehabilitation essentially remained the same across the study years. In contrast, roughly the same percentage of children (slightly over half) used outpatient in 2011 as in 2005, yet outpatient represented only 10% of total expense in 2011 compared to 16.5% in 2005, suggesting that less was spent per child receiving outpatient in 2011. Although key HCBS experienced increases in share of total spending between 2005 and 2011, peer services, MST, respite, supported housing, and in-home services each remained under 1% of total expense in all three study years. (As noted earlier, expenditures for these service types are understated because some states use psychosocial rehabilitation billing codes for them.) Wraparound increased from 1% of total spending to 2.4%. (Spending on Wraparound also is understated because some states use TCM or psychosocial rehabilitation billing codes for Wraparound.)

Chart 8. Comparison of Use and Expense for Children's Behavioral Health Services in Medicaid with Highest Total Expenditures, 2011



Total Child Behavioral Health Expenditures by Service Type by Gender (Exhibit 9)

Total expenditures for boys are higher than for girls for every type of service, principally because there are more boys than girls using BHS in general, and because their rate of use of most service types is higher than that of girls. In addition, the mean expense for boys (discussed in the next section) is higher for most service types than for girls, suggesting that they may be remaining in services longer than girls. For some service types, total expenditures for boys are significantly higher than for girls in every study year. Psychotropic medication expense for boys is over two and a half times more than for girls ($1.3 billion for boys in 2011, compared to $576.1 million for girls). Substance use outpatient expenditures for boys in 2011 were over twice what was spent on girls ($49.8 million versus $21.9m) and were over three times higher for substance use residential treatment ($25.1 versus $7.6 million). Expenditures for residential treatment/group care are one and a half times higher for boys than for girls ($1.5 billion versus $951.6 million). Even for inpatient psychiatric hospitalization, where girls have a higher rate of use than boys, total inpatient expense for boys still runs 29% higher than for girls because more boys are using services in general and

because their mean inpatient expense is higher. That said, girls' share of expense increased between 2008 and 2011 for about half the service types, including: outpatient, psychotropic medication, screening/assessment, medication management, family therapy, psychosocial rehabilitation, case management, TCM, behavior management, residential treatment/group care, non-ER crisis stabilization, inpatient psychiatric hospitalization, mental health consultation, Wraparound, respite, and in-home services. Girls' share of expense decreased between 2008 and 2011 for the following services: psychological testing, group therapy, partial hospitalization, substance use screening/assessment/evaluation, therapeutic foster care, supported housing, ER, and peer support.

Exhibit 9. Total Child BHS Expenditures by Service Type and by Gender, 2008 and 2011

Service Type	2008			2011		
	Total Expenditure ($ and % of Total)	Female	Male	Total Expenditure ($ and & of Total)	Female	Male
Outpatient treatment (primarily individual)	724,748,736 8.0%	297,008,288 41.0%	427,736,896 59.0%	1,149,764,212 10.1%	484,852,564 42.2%	664,901,019 57.8%
Psychotropic medication	1,431,685,504 15.7%	430,005,856 30.0%	1,001,673,280 70.0%	1,861,405,066 16.4%	576,125,394 31.0%	1,285,268,216 69.0%
Screening/assessment/evaluation	199,728,032 2.2%	80,497,496 40.3%	119,221,456 59.7%	259,258,742 2.3%	106,622,683 41.1%	152,602,070 58.9%
Medication management	123,954,248 1.4%	41,962,648 33.9%	81,990,848 66.1%	210,769,620 1.9%	73,799,077 35.0%	136,969,460 65.0%
Family therapy/family education and training	227,235,888 2.5%	93,107,576 41.0%	134,127,192 59.0%	289,274,236 2.6%	120,035,523 41.5%	169,231,961 58.5%
Psychosocial rehabilitation	1,306,464,000 14.3%	465,787,040 35.7%	840,666,752 64.3%	2,110,441,064 18.6%	799,479,350 37.9%	1,310,934,834 62.1%
Substance use outpatient	N/A	N/A	N/A	71,711,663 0.6%	21,873,451 30.5%	49,837,701 69.5%
Psychological testing	35,457,616 0.4%	13,516,025 38.1%	21,941,352 61.9%	45,240,778 0.4%	17,140,109 37.9%	28,100,312 62.1%
Initial service planning	21,105,076 0.2%	7,862,920 37.3%	13,241,017 62.7%	84,781,703 0.7%	33,423,236 39.4%	51,355,351 60.6%
Case management	238,403,712 2.6%	83,461,944 35.0%	154,939,456 65.0%	132,921,509 1.2%	48,807,528 36.7%	84,113,898 63.3%
Group therapy	127,291,336 1.4%	43,531,688 34.2%	83,756,232 65.8%	140,585,058 1.2%	47,452,612 33.8%	93,130,569 66.2%
Targeted case management	153,413,920 1.7%	56,303,264 36.7%	97,090,040 63.3%	243,624,088 2.1%	93,990,676 38.6%	149,581,901 61.4%
Behavior management consultation and training/therapeutic behavioral support	194,897,056 2.2%	60,089,996 30.8%	134,770,061 69.2%	336,234,925 2.9%	118,453,393 35.2%	217,771,214 64.8%
Residential treatment/therapeutic group homes	1,815,365,760 19.9%	693,277,120 38.2%	1,122,088,704 61.8%	2,458,348,260 21.7%	951,612,016 38.7%	1,506,699,818 61.3%
Crisis intervention and stabilization (non-ER)	39,598,616 0.4%	14,437,324 36.5%	25,159,912 63.5%	83,544,071 0.7%	36,032,110 43.1%	47,510,455 56.9%
Inpatient psychiatric treatment	768,832,896 8.4%	315,795,328 41.1%	453,016,896 58.9%	653,157,556 5.8%	285,161,125 43.7%	367,963,919 56.3%
Partial hospitalization/day treatment	486,011,264 5.3%	153,382,480 31.6%	332,622,720 68.4%	552,855,967 4.9%	174,652,838 31.6%	378,197,218 68.4%
Mental health consultation	41,772,568 0.5%	15,808,471 37.8%	25,963,220 62.2%	36,371,577 0.3%	14,125,184 38.8%	22,246,394 61.2%

Service Type	2008			2011		
	Total Expenditure ($ and % of Total)	Female	Male	Total Expenditure ($ and & of Total)	Female	Male
Substance use screening and assessment	13,413,375 0.1%	4,675,240 34.9%	8,737,519 65.1%	11,211,456 0.1%	3,346,883 29.9%	7,864,574 70.1%
Wraparound	99,339,088 1.1%	36,073,968 36.3%	63,265,120 63.7%	273,417,999 2.4%	100,298,075 36.7%	173,119,925 63.3%
Therapeutic foster care	211,481,872 2.3%	91,043,128 43.1%	120,431,936 56.9%	155,216,504 1.4%	64,179,803 41.3%	91,036,702 58.7%
Substance use inpatient/residential	N/A	N/A	N/A	32,652,037 0.3%	7,570,924 23.2%	25,081,113 76.8%
Respite	14,893,306 0.2%	4,215,067 28.3%	10,678,239 71.7%	24,748,692 0.2%	7,709,697 31.2%	17,038,995 68.8%
Supported housing	19,922,754 0.2%	7,411,166 37.2%	12,511,588 62.8%	37,620,222 0.3%	13,186,342 35.1%	24,433,880 64.9%
Transportation	34,638 0.0%*	10,902 31.5%	23,736 68.5%	66,657 0.0%*	30,391 45.6%	36,266 54.4%
Emergency room	20,130,620 0.2%	9,700,269 48.2%	10,429,344 51.8%	28,237,618 0.2%	13,513,308 47.9%	14,724,150 52.1%
Peer services	4,885,650 0.1%	2,010,582 41.2%	2,875,068 58.8%	8,706,909 0.1%	3,137,089 36.0%	5,569,819 64.0%
Home-based (e.g., in-home services)	21,520,784 0.2%	7,611,977 35.4%	13,908,807 64.6%	11,434,469 0.1%	4,488,683 39.3%	6,945,785 60.7%
Activity therapies	9,635,703 0.1%	3,314,214 34.4%	6,321,489 65.6%	7,666,186 0.1%	2,361,720 30.8%	5,304,466 69.2%
Multisystemic Therapy	8,941,070 0.1%	3,042,511 34.0%	5,898,559 66.0%	32,035,941 0.3%	10,141,491 31.7%	21,894,451 68.3%
All BHS	**9,109,844,752 (100%)**	**3,283,425,024 36.0%**	**5,826,280,191 64.0%**	**11,343,304,786 (100%)**	**4,233,603,277 37.3%**	**7,109,466,433 62.7%**

** Numbers too small to register as percentages.*

Total Child Behavioral Health Expenditures by Service Type by Age Groups (Exhibit 9a)

There is no service for which young children, ages 0-5, used the largest share of expense in either 2008 or 2011 due to both their smaller numbers in the child population using BHS and their relatively low mean expense (discussed below). Their share of expense increased between 2008 and 2011 for about half the service types, including: outpatient, screening/assessment, family therapy, psychosocial rehabilitation, psychological testing, inpatient psychiatric treatment, mental health consultation, therapeutic foster care, ER, and peer services.

Children, ages 6-12, used the largest share of expense for about 60% of the service types in both 2008 and 2011, including (unless otherwise noted): outpatient, psychotropic medication in 2011 (in 2008, their share of psychotropic medication expense was slightly lower than that of adolescents), screening/assessment/evaluation, medication management, family therapy, psychosocial rehabilitation, psychological testing, case management, group therapy in 2011 (in 2008, adolescents used a larger share), behavior management in 2011 (in 2008, adolescents used a notably larger share), partial hospitalization/day treatment, mental health consultation, Wraparound in 2011 (in 2008, adolescents used a larger share), therapeutic foster care, respite, peer services in 2011 (in 2008, adolescents used a larger share), and activity therapy in 2008 (in 2011, adolescents used a larger share).

Adolescents, ages 13-18, used the largest share of expense for all SUD services, virtually all facility-based care, including: residential treatment/group care, inpatient psychiatric treatment, and ER, as well as for TCM, non-ER crisis, therapeutic foster care, supported housing, in-home services, activity therapy (in 2011), and MST.

Exhibit 9a. Total Child Behavioral Health Expenditures by Service Type, by Age Group, 2008 and 2011

Service Type	2008				2011			
	Total Expenditure ($)	Ages 0 - 5	Ages 6 - 12	Ages 13 - 18	Total Expenditure ($)	Ages 0 - 5	Ages 6 - 12	Ages 13 - 18
Outpatient treatment (primarily individual)	724,748,736 8.0%	72,777,968 10.0%	361,249,728 49.8%	290,721,056 40.1%	1,149,764,212 10.1%	122,698,664 10.7%	583,469,508 50.7%	443,596,040 38.6%
Psychotropic medication	1,431,685,504 15.7%	64,941,128 4.5%	682,841,984 47.7%	683,902,400 47.8%	1,861,405,066 16.4%	76,724,639 4.1%	941,734,825 50.6%	842,945,602 45.3%
Screening/assessment/evaluation	199,728,032 2.2%	32,946,046 16.5%	88,127,336 44.1%	78,654,648 39.4%	259,258,742 2.3%	46,087,746 17.8%	117,475,791 45.3%	95,695,205 36.9%
Medication management	123,954,248 1.4%	8,642,278 7.0%	62,859,748 50.7%	52,452,224 42.3%	210,769,620 1.9%	13,009,032 6.2%	105,898,700 50.2%	91,861,888 43.6%
Family therapy/family education and training	227,235,888 2.5%	37,794,356 16.6%	119,167,624 52.4%	70,273,912 30.9%	289,274,236 2.6%	49,953,934 17.3%	153,501,075 53.1%	85,819,227 29.7%
Psychosocial rehabilitation	1,306,464,000 14.3%	164,244,288 12.6%	621,802,304 47.6%	520,417,440 39.8%	2,110,441,064 18.6%	271,386,249 12.9%	953,613,558 45.2%	885,441,257 42.0%
Substance use outpatient	N/A	N/A	N/A	N/A	71,711,663 0.6%	83,061 0.1%	2,689,196 3.8%	68,939,407 96.1%
Psychological testing	35,457,616 0.4%	6,447,494 18.2%	16,314,196 46.0%	12,695,928 35.8%	45,240,778 0.4%	8,658,785 19.1%	22,104,707 48.9%	14,477,286 32.0%
Initial service planning	21,105,076 0.2%	2,889,184 13.7%	10,076,402 47.7%	8,139,491 38.6%	84,781,703 0.7%	10,742,480 12.7%	37,654,621 44.4%	36,384,602 42.9%
Case management	238,403,712 2.6%	25,342,516 10.6%	112,586,768 47.2%	100,474,432 42.1%	132,921,509 1.2%	12,422,949 9.3%	67,232,377 50.6%	53,266,183 40.1%
Group therapy	127,291,336 1.4%	11,601,706 9.1%	56,262,676 44.2%	59,426,952 46.7%	140,585,058 1.2%	12,689,159 9.0%	70,096,726 49.9%	57,799,173 41.1%
Targeted case management	153,413,920 1.7%	21,390,556 13.9%	64,519,064 42.1%	67,504,296 44.0%	243,624,088 2.1%	32,046,784 13.2%	104,118,063 42.7%	107,459,241 44.1%
Behavior management consultation and training/therapeutic behavioral support	194,897,056 2.2%	28,193,774 15.5%	58,234,030 29.9%	108,469,253 54.5%	336,234,925 2.9%	33,226,520 9.9%	154,856,230 46.1%	148,152,175 44.1%
Residential treatment/therapeutic group homes	1,815,365,760 19.9%	26,131,928 1.4%	549,327,808 30.3%	1,239,906,048 68.3%	2,458,348,260 21.7%	34,442,746 1.4%	769,579,529 31.3%	1,654,325,985 67.3%
Crisis intervention and stabilization (non-ER)	39,598,616 0.4%	1,751,799 4.4%	11,399,279 28.8%	26,447,538 66.8%	83,544,071 0.7%	3,478,144 4.2%	28,847,311 34.5%	51,218,616 61.3%
Inpatient psychiatric treatment	768,832,896 8.4%	18,991,376 2.5%	238,533,472 31.0%	511,308,032 66.5%	653,157,556 5.8%	23,647,868 3.6%	233,200,637 35.7%	396,309,051 60.7%
Partial hospitalization/day treatment	486,011,264 5.3%	82,708,320 17.0%	240,028,256 49.4%	163,274,704 33.6%	552,855,967 4.9%	56,741,891 10.3%	296,236,181 53.6%	199,877,895 36.2%
Mental health consultation	41,772,568 0.5%	4,588,799 11.0%	25,171,206 60.3%	12,012,565 28.8%	36,371,577 0.3%	4,303,562 11.8%	21,653,344 59.5%	10,414,671 28.6%
Substance use screening and assessment	13,413,375 0.1%	N/A	N/A	N/A	11,211,456 0.1%	89,087 0.8%	664,237 5.9%	10,458,133 93.3%
Wraparound	99,339,088 1.1%	8,836,777 8.9%	42,782,632 43.1%	47,719,676 48.0%	273,417,999 2.4%	23,703,054 8.7%	133,964,376 49.0%	115,750,569 42.3%
Therapeutic foster care	211,481,872 2.3%	17,481,244 8.3%	71,924,656 34.0%	122,075,976 57.7%	155,216,504 1.4%	15,258,401 9.8%	49,423,127 31.8%	90,534,976 58.3%
Substance use inpatient/residential	N/A	N/A	N/A	N/A	32,652,037 0.3%	666,669 2.0%	429,203 1.3%	31,556,165 96.6%

Service Type	2008				2011			
	Total Expenditure ($)	Ages 0 - 5	Ages 6 - 12	Ages 13 - 18	Total Expenditure ($)	Ages 0 - 5	Ages 6 - 12	Ages 13 - 18
Respite	14,893,306 0.2%	1,353,405 9.1%	8,238,724 55.3%	5,301,177 35.6%	24,748,692 0.2%	2,034,418 8.2%	13,163,401 53.2%	9,550,873 38.6%
Supported housing	19,922,754 0.2%	360,476 1.8%	6,900,218 34.6%	12,662,060 63.6%	37,620,222 0.3%	1,366,093 3.6%	14,865,631 39.5%	21,388,498 56.9%
Transportation	34,638 0.0%*	8,142 23.5%	16,422 47.4%	10,074 29.1%	66,657 0.0%*	1,366,093 4.6%	14,865,631 42.5%	21,388,498 52.9%
Emergency room	20,130,620 0.2%	654,030 3.2%	5,257,356 26.1%	14,219,234 70.6%	28,237,618 0.2%	941,051 3.3%	7,991,888 28.3%	19,304,679 68.4%
Peer services	4,885,650 0.1%	430,542 8.8%	1,991,682 40.8%	2,463,426 50.4%	8,706,909 0.1%	891,679 10.2%	4,401,002 50.5%	3,414,228 39.2%
Home-based (e.g., in-home services)	21,520,784 0.2%	242,934 1.1%	7,521,982 35.0%	13,755,868 63.9%	11,434,469 0.1%	59,871 0.5%	3,829,709 33.5%	7,544,888 66.0%
Activity therapies	9,635,703 0.1%	545,097 5.7%	4,956,171 51.4%	4,134,435 42.9%	7,666,186 0.1%	265,069 3.5%	3,185,101 41.5%	4,216,016 55.0%
Multisystemic Therapy	8,941,070 0.1%	398 0.0%*	1,424,044 15.9%	7,516,628 84.1%	32,035,941 0.3%	1,347,480 4.2%	7,063,046 22.0%	23,625,415 73.7%
All BHS	**9,109,844,752 (100%)**	**671,090,161 7.4%**	**3,645,699,145 40.0%**	**4,793,055,513 52.6%**	**11,343,304,786 (100%)**	**858,970,183 7.6%**	**4,902,971,412 43.2%**	**5,581,363,192 49.2%**

** Numbers too small to register as percentages.*

Total Child Behavioral Health Expenditures by Service Type by Aid Category (Exhibit 9b)

Due to their sizeable numbers in the Medicaid child population, children enrolled through TANF used the largest share of virtually all service types in both 2008 and 2011, with the exception of: psychotropic medications in 2008, when children on SSI/disability used the largest share; behavior management in 2008, when children on SSI/disability and those in foster care both used similarly largest shares; respite, activity therapy and in-home services in both 2008 and 2011, when children on SSI/disability used the largest share; and therapeutic foster care in 2008 and 2011, when children in foster care used the largest share.

For the TANF population, share of total spending increased between 2008 and 2011 for all services except four. The four services where share of spending decreased included: residential treatment/group care, peer support, activity therapy, and MST. For the SSI/disability population, there were appreciable increases in share of total spending between 2008 and 2011 for six services: group therapy, residential treatment/group care, therapeutic foster care, peer support, activity therapy, and MST. For children in foster care, there were appreciable increases in share of total spending for three services: psychosocial rehabilitation, supported housing, and in-home services.

Exhibit 9b. Total Child Behavioral Health Expenditures by Service Type, by Aid Category, 2008 and 2011

Service Type	2008				2011			
	Total Expenditure ($)	SSI/ Disabled	TANF	Foster Care	Total Expenditure ($)	SSI/ Disabled	TANF	Foster Care
Outpatient treatment (primarily individual)	724,748,736 8.0%	145,806,448 20.1%	425,583,744 58.7%	153,358,576 21.2%	1,149,764,212 10.1%	218,397,432 19.0%	749,772,648 65.2%	181,594,132 15.8%
Psychotropic medication	1,431,685,504 15.7%	560,044,928 39.1%	528,402,848 36.9%	343,237,760 24.0%	1,861,405,066 16.4%	624,695,259 33.6%	892,995,960 48.0%	343,713,847 18.5%
Screening/assessment/evaluation	199,728,032 2.2%	35,232,472 17.6%	129,538,952 64.9%	34,956,600 17.5%	259,258,742 2.3%	40,803,106 15.7%	179,057,974 69.1%	39,397,662 15.2%
Medication management	123,954,248 1.4%	35,165,412 28.4%	65,690,964 53.0%	23,097,876 18.6%	210,769,620 1.9%	53,275,872 25.3%	120,709,554 57.3%	36,784,193 17.5%
Family therapy/family education and training	227,235,888 2.5%	40,164,576 17.7%	145,849,184 64.2%	41,222,124 18.1%	289,274,236 2.6%	51,407,245 17.8%	193,522,361 66.9%	44,344,631 15.3%
Psychosocial rehabilitation	1,306,464,000 14.3%	430,979,744 33.0%	664,533,440 50.9%	210,950,864 16.1%	2,110,441,064 18.6%	536,529,102 25.4%	1,162,524,024 55.1%	411,387,938 19.5%
Substance use outpatient	N/A	N/A	N/A	N/A	71,711,663 0.6%	6,076,539 8.5%	53,123,698 74.1%	12,511,426 17.4%
Psychological testing	35,457,616 0.4%	5,722,726 16.1%	17,181,788 48.5%	12,553,103 35.4%	45,240,778 0.4%	7,446,508 16.5%	23,276,326 51.4%	14,517,943 32.1%
Initial service planning	21,105,076 0.2%	6,233,736 29.5%	11,627,350 55.1%	3,243,991 15.4%	84,781,703 0.7%	19,718,320 23.3%	49,344,481 58.2%	15,718,902 18.5%
Case management	238,403,712 2.6%	90,948,336 38.1%	119,240,680 50.0%	28,214,704 11.8%	132,921,509 1.2%	31,867,669 24.0%	85,734,876 64.5%	15,318,963 11.5%
Group therapy	127,291,336 1.4%	28,288,500 22.2%	65,406,036 51.4%	33,596,796 26.4%	140,585,058 1.2%	35,207,811 25.0%	81,409,958 57.9%	23,967,289 17.0%
Targeted case management	153,413,920 1.7%	45,303,916 29.5%	67,450,120 44.0%	40,659,884 26.5%	243,624,088 2.1%	72,588,533 29.8%	113,037,509 46.4%	57,998,046 23.8%
Behavior management consultation and training/ therapeutic behavioral support	194,897,056 2.2%	69,041,765 35.4%	56,742,696 29.1%	69,112,600 35.5%	336,234,925 2.9%	96,493,993 28.7%	175,226,645 52.1%	64,514,287 19.2%
Residential treatment/therapeutic group homes	1,815,365,760 19.9%	515,467,136 28.4%	703,020,928 38.7%	596,877,760 32.9%	2,458,348,260 21.7%	838,601,987 34.1%	877,856,598 35.7%	741,889,674 30.2%
Crisis intervention and stabilization (non-ER)	39,598,616 0.4%	12,376,621 31.3%	16,701,978 42.2%	10,520,017 26.6%	83,544,071 0.7%	23,844,395 28.5%	46,155,055 55.2%	13,544,621 16.2%
Inpatient psychiatric treatment	768,832,896 8.4%	220,685,616 28.7%	353,966,880 46.0%	194,180,400 25.3%	653,157,556 5.8%	183,074,838 28.0%	337,246,591 51.6%	132,836,127 20.3%
Partial hospitalization/day treatment	486,011,264 5.3%	137,556,992 28.3%	278,130,560 57.2%	70,323,720 14.5%	552,855,967 4.9%	152,582,519 27.6%	328,449,505 59.4%	71,823,944 13.0%
Mental health consultation	41,772,568 0.5%	13,359,204 32.0%	22,415,332 53.7%	5,998,035 14.4%	36,371,577 0.3%	11,118,585 30.6%	21,315,381 58.6%	3,937,611 10.8%
Substance use screening and assessment	13,413,375 0.1%	1,459,316 10.9%	8,946,418 66.7%	3,007,641 22.4%	11,211,456 0.1%	954,620 8.5%	8,264,087 73.7%	1,992,750 17.8%
Wraparound	99,339,088 1.1%	34,431,436 34.7%	44,144,464 44.4%	20,763,188 20.9%	273,417,999 2.4%	76,315,454 27.9%	169,066,967 61.8%	28,035,578 10.3%

Service Type	2008				2011			
	Total Expenditure ($)	SSI/ Disabled	TANF	Foster Care	Total Expenditure ($)	SSI/ Disabled	TANF	Foster Care
Therapeutic foster care	211,481,872 2.3%	51,579,592 24.4%	35,837,648 16.9%	124,064,632 58.7%	155,216,504 1.4%	50,160,418 32.3%	37,539,026 24.2%	67,517,060 43.5%
Substance use inpatient/residential	N/A	N/A	N/A	N/A	32,652,037 0.3%	1,871,462 5.7%	26,473,608 81.1%	4,306,967 13.2%
Respite	14,893,306 0.2%	9,746,177 65.4%	3,323,843 22.3%	1,823,286 12.2%	24,748,692 0.2%	14,222,294 57.5%	7,565,857 30.6%	2,960,541 12.0%
Supported housing	19,922,754 0.2%	7,566,880 38.0%	9,655,596 48.5%	2,700,278 13.6%	37,620,222 0.3%	10,289,133 27.4%	21,918,704 58.3%	5,412,386 14.4%
Transportation	34,638 0.0%*	27,462 79.3%	4,899 14.1%	2,277 6.6%	66,657 0.0%*	22,818 34.2%	33,948 50.9%	9,891 14.8%
Emergency room	20,130,620 0.2%	5,453,905 27.1%	11,659,913 57.9%	3,016,802 15.0%	28,237,618 0.2%	6,421,313 22.7%	18,456,315 65.4%	3,359,991 11.9%
Peer services	4,885,650 0.1%	1,237,194 25.3%	2,882,250 59.0%	766,206 15.7%	8,706,909 0.1%	3,817,005 43.8%	4,516,545 51.9%	373,359 4.3%
Home-based (e.g., in-home services)	21,520,784 0.2%	18,292,240 85.0%	1,644,523 7.6%	1,584,022 7.4%	11,434,469 0.1%	8,535,197 74.6%	1,284,604 11.2%	1,614,668 14.1%
Activity therapies	9,635,703 0.1%	6,136,053 63.7%	1,773,156 18.4%	1,726,494 17.9%	7,666,186 0.1%	6,069,496 79.2%	589,072 7.7%	1,007,618 13.1%
Multisystemic Therapy	8,941,070 0.1%	1,474,988 16.5%	6,980,920 78.1%	485,162 5.4%	32,035,941 0.3%	6,605,219 20.6%	24,231,345 75.6%	1,199,377 3.7%
All BHS	**9,109,844,752 (100%)**	**2,687,817,979 29.5%**	**4,146,481,366 45.5%**	**2,275,545,550 (25%)**	**11,343,304,786 (100%)**	**3,189,014,142 28.1%**	**5,810,699,221 51.2%**	**2,343,591,424 20.7%**

** Numbers too small to register as percentages.*

Total Child Behavioral Health Expenditures by Service Type by Race/Ethnicity (Exhibit 9c)

Because of both their large numbers in the Medicaid child population and their over-representation among children using BHS, White children used the largest share of total expenditures for all services, except, in 2008, for therapeutic foster care and supported housing, where BL/AA children used a larger share, and, in 2011, partial hospitalization/day treatment and Wraparound, where BL/AA children used a larger share. In contrast, with the few exceptions noted for BL/AA children, no other racial/ethnic group consumed the majority dollars for any service type. On the other hand, between 2008 and 2011, White children's share of total expense decreased for most services; there were only eight services where their share of total expense increased, including: case management, non-ER crisis stabilization, substance use screening and assessment, therapeutic foster care, peer services, in-home services, activity therapy, and MST. For BL/AA children, there was more of a mixed picture on share of spending changes between 2008 and 2011. For 15 service types (over half), share of total spending decreased for BL/AA children; for 11 service types, share of spending increased. Services where share of spending decreased included: psychotropic medication, medication management, family therapy, psychosocial rehabilitation, psychological testing, group therapy, TCM, behavior management, residential treatment/group care, non-ER crisis stabilization, therapeutic foster care, supported housing, ER, in-home, and activity therapy. Services where share of spending increased for BL/AA children between 2008 and 2011 included: outpatient, screening/assessment/evaluation, case management, inpatient psychiatric treatment, partial hospitalization/day treatment, mental health consultation, substance use screening and assessment, Wraparound, respite, peer support, and MST.

For AI/AN children, there were largely decreases in share of total spending between 2008 and 2011 for most of the services, which is due to their decreased numbers among Medicaid children in general and among children using BHS. There were only

four services where share of total spending increased for AI/AN children, including: psychological testing, behavior management, therapeutic foster care, and supported housing.

For Asian children, between 2008 and 2011, share of total spending increased for about half the services, including: screening/assessment/evaluation, medication management (share of psychotropic medication spending stayed the same), family therapy, psychosocial rehabilitation, psychological testing, group therapy, TCM, residential treatment/group care, non-ER crisis stabilization, partial hospitalization/day treatment, mental health consultation, Wraparound, therapeutic foster care, ER, and peer support.

For Hispanic/Latino children, share of total spending between 2008 and 2011 also increased for about half the service types, including: psychotropic medication, medication management, family therapy, psychosocial rehabilitation, TCM, behavior management, non-ER crisis stabilization, partial hospitalization/day treatment, mental health consultation, Wraparound, therapeutic foster care, respite, supported housing, and in-home services.

For NH/PI children, there were increases in share of total expenditures for about 40% of the service types between 2008 and 2011. Share of total spending stayed the same for many of the service types. Increases in share of total expense occurred for the following services: medication management (share of spending for psychotropic medication stayed the same), psychosocial rehabilitation, case management, TCM, case management, behavior management, non-ER crisis stabilization, substance use screening and assessment, Wraparound, therapeutic foster care, and respite.

For Hispanic/Latino children of more than one race, share of total spending increased between 2008 and 2011 for all service types, except four where share of spending declined, including: case management, partial hospitalization/day treatment, in-home services, and activity therapy.

For Multiracial children, share of total spending also increased between 2008 and 2011 for all service types, except three where share of spending declined, including: case management, Wraparound, and in-home, and two where there was no change, including supported housing and MST.

Exhibit 9 c. Total Child Behavioral Health Expenditures by Service Type, by Race/Ethnicity, 2008

Service Type	2008									
	Total Expenditure ($)	White	Black/ African American	American Indian/ Alaska Native	Asian	Hispanic or Latino	Native Hawaiian/ Pacific Islander	Hispanic/ Latino + one/more races	More than one race	Unknown
Outpatient treatment (primarily individual)	724,748,736 8.0%	360,391,520 49.7%	193,710,752 26.7%	13,372,003 1.8%	3,582,987 0.5%	51,333,340 7.1%	757,789 0.1%	45,876,380 6.3%	5,319,205 0.7%	50,404,760 7.0%
Psychotropic medication	1,431,685,504 15.7%	825,491,584 57.7%	298,068,256 20.8%	18,752,012 1.3%	4,509,365 0.3%	94,172,104 6.6%	1,642,354 0.1%	36,042,496 2.5%	7,515,320 0.5%	145,492,016 10.2%
Screening/assessment/evaluation	199,728,032 2.2%	103,877,328 52.0%	53,408,684 26.7%	3,402,505 1.7%	900,071 0.5%	18,666,808 9.3%	201,149 0.1%	4,483,612 2.2%	850,458 0.4%	13,937,412 7.0%
Medication management	123,954,248 1.4%	69,006,064 55.7%	30,103,458 24.3%	1,608,001 1.3%	386,043 0.3%	11,868,228 9.6%	92,893 0.1%	1,866,288 1.5%	370,017 0.3%	8,653,255 7.0%
Family therapy/family education and training	227,235,888 2.5%	126,262,632 55.6%	51,534,316 22.7%	4,888,343 2.2%	767,055 0.3%	16,388,045 7.2%	322,656 0.1%	6,783,660 3.0%	1,400,449 0.6%	18,888,736 8.3%
Psychosocial rehabilitation	1,306,464,000 14.3%	614,928,960 47.1%	485,330,624 37.1%	28,263,514 2.2%	5,711,234 0.4%	42,735,544 3.3%	1,664,816 0.1%	19,374,648 1.5%	5,365,835 0.4%	103,088,864 7.9%
Substance use outpatient	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Psychological testing	35,457,616 0.4%	18,088,040 51.0%	8,500,094 24.0%	1,042,473 2.9%	122,304 0.3%	4,753,282 13.4%	27,716 0.1%	527,358 1.5%	211,753 0.6%	2,184,599 6.2%
Initial service planning	21,105,076 0.2%	11,684,169 55.4%	6,362,442 30.1%	356,764 1.7%	52,781 0.3%	829,690 3.9%	33,455 0.2%	270,794 1.3%	55,574 0.3%	1,459,408 6.9%
Case management	238,403,712 2.6%	138,720,640 58.2%	44,555,352 18.7%	4,726,742 2.0%	1,613,741 0.7%	22,160,484 9.3%	180,798 0.1%	5,738,113 2.4%	876,538 0.4%	19,831,314 8.3%

Service Type	2008									
	Total Expenditure ($)	White	Black/ African American	American Indian/ Alaska Native	Asian	Hispanic or Latino	Native Hawaiian/ Pacific Islander	Hispanic/ Latino + one/more races	More than one race	Unknown
Group therapy	127,291,336 1.4%	60,847,000 47.8%	36,190,728 28.4%	2,860,986 2.2%	626,068 0.5%	9,989,590 7.8%	376,071 0.3%	5,111,166 4.0%	797,816 0.6%	10,491,906 8.2%
Targeted case management	153,413,920 1.7%	84,409,360 55.0%	43,783,116 28.5%	3,152,252 2.1%	623,204 0.4%	4,552,914 3.0%	61,560 0.0%*	3,578,610 2.3%	1,215,968 0.8%	12,036,936 7.8%
Behavior management consultation and training/therapeutic behavioral support	194,897,056 2.2%	89,434,140 45.9%	65,066,195 33.4%	1,382,113 0.7%	2,406,106 1.2%	14,988,207 7.7%	4,724 0.0%*	2,045,587 1.0%	28,933 0.0%*	19,541,055 10.0%
Residential treatment/therapeutic group homes	1,815,365,760 19.9%	910,134,976 50.1%	447,465,088 24.6%	101,561,688 5.6%	8,168,996 0.4%	102,063,408 5.6%	2,099,992 0.1%	57,586,156 3.2%	18,468,268 1.0%	167,817,200 9.2%
Crisis intervention and stabilization (non-ER)	39,598,616 0.4%	15,978,252 40.4%	13,200,699 33.3%	721,916 1.8%	276,883 0.7%	1,945,480 4.9%	103,563 0.3%	1,680,671 4.2%	428,631 1.1%	5,262,521 13.3%
Inpatient psychiatric treatment	768,832,896 8.4%	402,108,320 52.3%	180,099,360 23.4%	22,278,120 2.9%	5,450,637 0.7%	71,621,536 9.3%	2,082,983 0.3%	13,359,140 1.7%	2,554,958 0.3%	69,277,840 9.0%
Partial hospitalization/day treatment	486,011,264 5.3%	183,873,776 37.8%	230,994,688 47.5%	8,084,936 1.7%	957,575 0.2%	10,011,545 2.1%	209,150 0.0%*	17,846,484 3.7%	2,455,654 0.5%	31,577,464 6.5%
Mental health consultation	41,772,568 0.5%	15,162,540 36.3%	9,568,767 22.9%	232,389 0.6%	370,259 0.9%	653,769 1.6%	125,094 0.3%	10,167,398 24.3%	663,405 1.6%	4,828,949 11.6%
Substance use screening and assessment	13,413,375 0.1%	6,770,945 50.5%	4,097,919 30.6%	377,956 2.8%	53,082 0.4%	1,134,945 8.5%	13,029 0.1%	414,203 3.1%	65,399 0.5%	485,897 3.6%
Wraparound	99,339,088 1.1%	45,594,344 45.9%	36,487,736 36.7%	3,465,764 3.5%	129,469 0.1%	1,144,678 1.2%	22,040 0.0%*	976,760 1.0%	882,935 0.9%	10,635,361 10.7%
Therapeutic foster care	211,481,872 2.3%	85,812,512 40.6%	94,516,896 44.7%	5,907,071 2.8%	330,430 0.2%	6,856,000 3.2%	29,535 0.0%*	2,140,094 1.0%	744,380 0.4%	15,144,950 7.2%
Substance use inpatient/residential	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Respite	14,893,306 0.2%	9,962,049 66.9%	1,573,354 10.6%	372,253 2.5%	134,434 0.9%	1,223,141 8.2%	365 0.0%*	149,506 1.0%	73,693 0.5%	1,404,511 9.4%
Supported housing	19,922,754 0.2%	9,070,068 45.5%	9,896,110 49.7%	22,288 0.1%	10,348 0.1%	232,154 1.2%	3,980 0.0%*	5,382 0.0%*	5,382 0.0%*	677,042 3.4%
Transportation	34,638 0.0%*	2,346 6.8%	0 0.0%	0 0.0%	0 0.0%	26,841 77.5%	0 0.0%	0 0.0%	0 0.0%	5,451 15.7%
Emergency room	20,130,620 0.2%	10,722,618 53.3%	5,071,703 25.2%	392,602 2.0%	116,162 0.6%	1,694,471 8.4%	43,967 0.2%	635,949 3.2%	109,175 0.5%	1,343,973 6.7%
Peer services	4,885,650 0.1%	2,010,582 41.2%	282,366 5.8%	156,114 3.2%	9,450 0.2%	1,929,312 39.5%	378 0.0%*	8,316 0.2%	9,450 0.2%	479,682 9.8%
Home-based (e.g., in-home services)	21,520,784 0.2%	11,683,035 54.3%	2,606,895 12.1%	217,134 1.0%	165,565 0.8%	928,798 4.3%	19,632 0.1%	2,039,825 9.5%	647,107 3.0%	3,212,793 14.9%
Activity therapies	9,635,703 0.1%	7,266,849 75.4%	770,529 8.0%	205,434 2.1%	125,745 1.3%	323,604 3.4%	23,634 0.2%	294,819 3.1%	140,289 1.5%	484,800 5.0%
Multisystemic Therapy	8,941,070 0.1%	2,869,381 32.1%	1,979,851 22.1%	340,489 3.8%	41,790 0.5%	3,005,497 33.6%	0 0.0%	62,884 0.7%	17,512 0.2%	623,666 7.0%
All BHS	**9,109,844,752 (100%)**	**4,585,578,526 50.3%**	**2,621,516,158 28.8%**	**260,396,915 2.9%**	**39,726,378 0.4%**	**527,660,773 5.8%**	**11,587,783 0.1%**	**249,642,762 2.7%**	**55,764,863 0.6%**	**757,970,629 8.3%**

** Numbers too small to register as percentages.*

Highlights and Implications of the Data

Even with gains in spending on HCBS between 2005 and 2011, there remains an imbalance between the percentage of total dollars spent on the most restrictive services and psychotropic medication and the share spent on key HCBS. In 2011, 44% of total expense was for residential treatment/group care, inpatient psychiatric treatment and psychotropic medication, compared to 22% spent on psychosocial rehabilitation, Wraparound, respite, supported housing, peer support, in-home services, and MST combined. Twenty-eight percent of dollars was spent on residential treatment/group care and inpatient psychiatric treatment for under 10% of all children receiving services. In comparison, the 22% of dollars spent on key HCBS reached 26% of children served. There are clearly continuing opportunities for states to expand use of HCBS to improve both the cost and quality of care.

In all study years, boys have consistently used an appreciably larger share of total expenditures for deep-end services and for psychotropic medications. Their share of total expense for psychotropic medication is two and a half times greater than for girls; their share of expense for residential treatment/group care runs one and a half times greater; for substance use inpatient/residential, three times greater, and for inpatient psychiatric treatment, 29% greater. Adolescents also used disproportionately large shares of total expense for facility-based services like inpatient hospitalization, residential treatment/group care, and ER. The data suggest a continuing need for improved HCBS alternatives for boys and adolescents. By the same token, for the first time in the study, children, ages 6-12, used a larger share than adolescents of psychotropic medication total expense. This is partly due to a decrease in the proportion of adolescents in the Medicaid child population and among children using BHS, but it also is true that children, ages 6-12, have higher psychotropic medication utilization in 2011 than in previous study years. Many states began their psychotropic medication monitoring efforts with the young children, ages 0-5, population. The data affirm the need to expand those efforts to older children.

Because of their relatively large representation among children in Medicaid and those using BHS, White children continued to use the majority of total expenditures for most service types. However, their share of spending decreased between 2005 and 2011 for most service types, and virtually all other racial/ethnic groups experienced increases in total share of spending for many of the service types. This increase in share of spending was especially true for Hispanic/Latino, Asian, Hispanic/Latino of more than one race, and Multiracial children. AI/AN children were the one group that experienced decreases in share of total expense for most service types, which was due to their decreased representation among Medicaid children and among those using BHS. Across racial/ethnic groups, there were differences in the types of services where increased share of total spending occurred, and some of these differences raise concern. For example, there were increases in share of total expense for BL/AA children for inpatient psychiatric hospitalization and partial hospitalization/day treatment. There were increases in share of total expense for Asian children in residential treatment/group care, partial hospitalization, and ER. Hispanic/Latino children experienced increases in share of total expense for psychotropic medications, as well as partial hospitalization/day treatment. Hispanic/Latino children of more than one race and Multiracial children experienced increases in total share of spending for all facility-based care, as well as psychotropic medication. Many of these groups also experienced increases in share of spending for many HCBS as well. It will be important to continue to track utilization and expenditures across racial/ethnic groups as the Medicaid child population and children using BHS become increasingly diverse.

Mean Child Behavioral Health Expenditures by Service Type and by Gender (Exhibit 10)

Between 2008 and 2011, mean expenditures increased for about half the service types and decreased or stayed the same for the other half. Notable mean expense *increases* for HCBS included: substance use outpatient up 61%, Wraparound up 56%, respite up 48%, non-ER crisis alternatives up 38%, MST up 37%, and supported housing up 20%. Notable mean expense *decreases* for home and community-based services included: in-home services down 58%, peer support down 53%, case management down 33%, and mental health consultation down 28%. The mean expense for residential treatment/group care increased 23%, from $18,531 to $22,711, while the mean expense for inpatient psychiatric treatment dropped 144% between 2008 and 2011, from $11,803 to $4,840. While mean expense for psychotropic medications rose just 3%, the mean expense for medication management increased 36%.

Between 2008 and 2011, there were two noteworthy changes in the top five services with the highest mean expense: inpatient psychiatric hospitalization dropped from the list in 2011, as did in-home services. They were replaced by MST and Wraparound. Between 2008 and 2011, there was one change in the services with the lowest mean expense: outpatient dropped from the list, and case management was added. In 2011, the top five services with the highest mean expense were, in order: residential treatment/group care, therapeutic foster care, MST, substance use inpatient/residential, and Wraparound.

For virtually all service types, males had higher mean expense than females in both study years. The only appreciable higher mean expense for females was for in-home services and MST in 2011. There was no difference between males and females in the top five services with the highest mean expense, which included: residential treatment/group care, therapeutic foster care, MST, substance use inpatient/residential, and Wraparound.

Exhibit 10. Mean Child Behavioral Health Expenditures by Service Type and by Gender, 2008 and 2011

Service Type	2008			2011		
	Mean Expenditures	Female	Male	Mean Expenditures	Female	Male
Outpatient treatment (primarily individual)	729	711	743	827	818	834
Psychotropic medication***	1,590	1,359	1,716	1,640	1,410	1,770
Screening/assessment/evaluation	215	207	221	213	205	219
Medication management	247	238	252	336	330	339
Family therapy/family education and training	476	473	478	457	451	461
Psychosocial rehabilitation	3,451	3,230	3,587	3,412	3,213	3,546
Substance use outpatient	1,009	959	1,040	1,624	1,600	1,636
Psychological testing	381	383	380	398	401	397
Initial service planning	130	120	136	287	277	295
Case management	1,204	1,117	1,256	812	767	840
Group therapy	725	685	747	675	643	693
Targeted case management	1,331	1,349	1,321	1,130	1,118	1,137
Behavior management consultation and training/therapeutic behavioral support	3,588	3,018	3,918	3,009	2,677	3,227
Residential treatment/therapeutic group homes	18,531	17,575	19,175	22,711	21,484	23,561
Crisis intervention and stabilization (non-ER)	541	447	614	745	720	766
Inpatient psychiatric treatment	11,803	10,663	12,754	4,840	4,576	5,067
Partial hospitalization/day treatment	5,154	4,544	5,495	5,499	4,975	5,782

Service Type	2008			2011		
	Mean Expenditures	Female	Male	Mean Expenditures	Female	Male
Mental health consultation	582	564	594	421	403	433
Substance use screening and assessment	215	173	191	253	223	268
Wraparound	4,563	4,251	4,762	7,102	6,986	7,170
Therapeutic foster care	12,063	11,962	12,142	13,254	12,328	13,995
Substance use inpatient/residential	16,006	14,428	16,856	8,315	7,452	8,616
Respite	2,885	2,466	3,092	4,282	3,956	4,448
Supported housing	4,326	4,457	4,253	5,207	4,924	5,374
Transportation	912	839	949	229	271	203
Emergency room	162	163	161	179	180	178
Peer services	2,472	2,611	2,384	1,171	1,081	1,228
Home-based (e.g., in-home services)	12,256	11,311	12,843	5,301	6,157	4,864
Activity therapies	3,889	3,626	4,042	3,882	3,012	4,454
Multisystemic Therapy	7,329	7,109	7,448	10,005	10,338	9,858

Mean Child Behavioral Health Expenditures by Service Type by Age Group (Exhibit 10a)

For both study years, young children, ages 0-5, had the lowest mean expenditures for virtually all service types. In both 2008 and 2011, children, ages 6-12, had the highest mean expense for outpatient, family therapy, case management, and mental health consultation. However, in 2011, they no longer had the highest mean expense for psychosocial rehabilitation and psychological testing, as was the case in 2008. Instead, they experienced the highest mean expense in 2011 for services for which, historically, adolescents, ages 13-18, claimed highest mean expense — namely, residential treatment/therapeutic group homes, inpatient psychiatric hospitalization, partial hospitalization/day treatment, and peer services. In both study years, adolescents, ages 13-18, had the highest mean expenditures for over 60% of the service types. In both years, this list included: psychotropic medications, screening/assessment/evaluation, substance use outpatient and substance use inpatient/residential, group therapy, TCM, behavioral management, ER and non-ER crisis, Wraparound, therapeutic foster care, respite, supported housing, in-home, and MST. However, in 2011, adolescents, ages 13-18, also claimed the highest mean expenses for medication management, psychosocial rehabilitation, psychological testing, and activity therapy, which was not the case in 2008, and, as noted, adolescents ceded highest mean expense in 2011 to children, ages 6-12, for residential treatment, inpatient psychiatric, partial hospitalization/day treatment, and peer services.

The top five services with the highest mean expense differed only slightly across age groups and study years. Residential treatment/group care, therapeutic foster care, and substance use inpatient/residential were in the top five for highest mean expense for all age groups and in both study years. For young children, ages 0-5, Wraparound was on the list for both years and MST in 2011, supplanting partial hospitalization/day treatment. For children, ages 6-12, Wraparound and MST were among the top five with highest mean expense in 2011, replacing inpatient psychiatric and in-home services. For adolescents, MST (but not Wraparound) joined the top five in 2011, while inpatient psychiatric treatment dropped off the list.

Exhibit 10a. Mean Child Behavioral Health Expenditures by Service Type and by Age Group, 2008 and 2011

Service Type	2005				2008				2011			
	Mean Expenditures	Ages 0 – 5	Ages 6 – 12	Ages 13 – 18	Mean Expenditures	Ages 0 – 5	Ages 6 – 12	Ages 13 – 18	Mean Expenditures	Ages 0 – 5	Ages 6 – 12	Ages 13 – 18
Outpatient treatment (primarily individual)	1,275	984	1,251	1,349	729	568	762	743	827	706	861	824
Psychotropic medication***	1,267	670	1,199	1,382	1,590	930	1,560	1,741	1,640	928	1,649	1,752
Screening/assessment/evaluation	219	233	209	224	215	191	216	225	213	192	214	224
Medication management	352	234	341	371	247	206	253	249	336	277	333	350
Family therapy/family education and training	428	372	440	430	476	442	497	461	457	444	473	439
Psychosocial rehabilitation	3,416	2,147	3,248	3,882	3,451	2,718	3,654	3,517	3,412	2,550	3,385	3,843
Substance use outpatient	3,625	1,312	2,051	4,584	1,009	867	912	1,113	1,624	299	1,193	1,657
Psychological testing	264	213	264	285	381	364	389	380	398	364	402	415
Initial service planning	153	182	166	133	130	134	133	124	287	243	269	327
Case management	1,233	1,070	1,267	1,227	1,204	1,020	1,268	1,190	812	684	911	742
Group therapy	598	753	624	558	725	665	668	803	675	642	678	679
Targeted case management	1,683	1,754	1,540	1,784	1,331	1,368	1,271	1,381	1,130	1,003	1,096	1,211
Behavior management consultation and training/ therapeutic behavioral support	-	-	-	-	3,588	3,786	2,657	4,347	3,009	2,100	2,877	3,479
Residential treatment/therapeutic group homes	21,671	9,813	21,483	21,924	18,531	7,902	17,265	19,731	22,711	9,249	23,228	23,173
Crisis intervention and stabilization (non-ER)	667	457	566	724	541	367	441	620	745	596	711	780
Inpatient psychiatric treatment	6,652	3,462	7,162	6,938	11,803	2,799	12,679	12,931	4,840	2,792	5,381	4,767
Partial hospitalization/day treatment	5,746	5,860	5,782	5,695	5,154	5,791	5,322	4,676	5,499	3,971	6,060	5,350
Mental health consultation	6	5	7	6	582	534	659	482	421	371	471	361
Substance use screening and assessment	245	233	209	224	215	191	216	225	253	125	156	266
Wraparound	3,467	2,408	3,177	3,892	4,563	3,685	4,642	4,699	7,102	4,865	7,267	7,618
Therapeutic foster care	11,219	6,035	12,453	11,817	12,063	5,825	12,778	13,715	13,254	6,366	13,717	15,853
Substance use inpatient/residential	4,773	79	128	5,318	16,006	5,985	13,603	17,413	8,315	5,747	6,923	8,417
Respite	649	732	826	499	2,885	2,391	2,786	3,234	4,282	4,127	4,212	4,418
Supported housing	2,315	1,327	1,879	2,727	4,326	2,172	3,015	5,889	5,207	4,296	3,740	7,295
Transportation	0	-	-	-	912	1,163	912	775	229	155	208	261
Emergency room	1,162	1,013	1,154	1,164	162	122	159	165	179	139	180	181
Peer services	492	-	1,119	222	2,472	1,840	2,477	2,626	1,171	1,090	1,253	1,099
Home-based (e.g., in-home services)	17,191	4,797	14,135	19,856	12,256	1,528	10,262	15,921	5,301	193	3,853	8,856
Activity therapies	1,658	847	1,506	1,872	3,889	2,621	4,158	3,835	3,882	1,921	3,730	4,289
Telehealth	495	253	518	576	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Multisystemic Therapy	1,662	-	2,885	1,051	7,329	398	7,050	7,391	10,005	6,771	9,962	10,299

Mean Child Behavioral Health Expenditures by Service Type by Aid Category (Exhibit 10b)

In 2008, children enrolled through TANF did not have the highest mean expense for any service type; however, in 2011, they claimed the highest mean expense for both Wraparound and MST. In 2008, children on SSI/disability had the highest mean expense for 56% of the service types; in 2011, that percentage dropped to 48%. Children in foster care, in both 2008 and 2011, had the highest mean expense for 44% of the service types, as well as the highest mean expense in both years for psychotropic medication. However, there were some changes in the mix of services. In 2008, children in foster care had the highest mean expense for inpatient psychiatric treatment, residential treatment/therapeutic group homes, non-ER crisis, and group therapy. In 2011, children on SSI/disability claimed the highest mean expense for these services. In 2011, children in foster care acquired the highest mean expense for psychosocial rehabilitation, behavior management, and partial hospitalization, which previously had been claimed by children on SSI. For the most part, however, children in foster care either exceeded mean expense or were very similar in mean expense to children with disabilities for all service types, with the marked exception being in-home services, where children on SSI/disability had mean expense in both 2008 and 2011 that was significantly higher than that of children in foster care.

The top five services with the highest mean expense for children on SSI/disability in 2008 were: substance use inpatient/residential, in-home, residential treatment/therapeutic group homes, therapeutic foster care, and inpatient psychiatric treatment. In 2011, the hierarchical order changed, and MST replaced inpatient psychiatric treatment on the list. For children in foster care, the top five services with the highest mean expense in 2008 were: residential treatment/therapeutic group homes, inpatient psychiatric, substance use inpatient/residential, therapeutic foster care, and MST. In 2011, the hierarchical order changed, and in-home services replaced inpatient psychiatric treatment on the list. For children on TANF, the top five services with the highest mean expense in 2008 included: residential treatment/therapeutic group homes, substance use inpatient/residential, therapeutic foster care, inpatient psychiatric, and MST. In 2011, the hierarchical order changed, and Wraparound replaced inpatient psychiatric treatment on the list.

Exhibit 10b. Mean Child Behavioral Health Expenditures by Service Type and by Aid Category, 2008 and 2011

Service Type	2005				2008				2011			
	Mean Expenditures	SSI/ Disabled	TANF	Foster Care	Mean Expenditures	SSI/ Disabled	TANF	Foster Care	Mean Expenditures	SSI/ Disabled	TANF	Foster Care
Outpatient treatment (primarily individual)	1,275	1,506	1,022	1,983	729	915	625	1,001	827	1,017	743	1,093
Psychotropic medication	1,267	1,861	847	1,843	1,590	2,354	1,021	2,372	1,640	2,263	1,248	2,400
Screening/assessment/evaluation	219	220	207	264	215	246	200	252	213	241	198	273
Medication management	352	371	287	501	247	278	221	297	336	347	310	435
Family therapy/family education and training	428	454	392	551	476	521	444	573	457	505	427	572
Psychosocial rehabilitation	3,416	5,040	2,182	6,112	3,451	5,009	2,708	4,478	3,412	4,810	2,718	5,195
Substance use outpatient	3,625	4,649	2,353	7,006	1,009	1,138	938	1,223	1,624	1,620	1,593	1,774
Psychological testing	264	253	253	306	381	370	377	392	398	402	370	451
Initial service planning	153	238	124	153	130	201	108	134	287	381	244	383
Case management	1,233	1,701	1,053	1,085	1,204	1,747	987	1,120	812	1,028	767	728

Service Type	2005				2008				2011			
	Mean Expenditures	SSI/ Disabled	TANF	Foster Care	Mean Expenditures	SSI/ Disabled	TANF	Foster Care	Mean Expenditures	SSI/ Disabled	TANF	Foster Care
Group therapy	598	779	529	648	725	849	587	1,086	675	871	580	870
Targeted case management	1,683	1,807	1,332	2,492	1,331	1,389	1,071	2,066	1,130	1,364	867	1,807
Behavior management consultation and training/therapeutic behavioral support	-	-	-	-	3,588	5660	1921	5494	3,009	3689	2513	4070
Residential treatment/therapeutic group homes	21,671	25,118	16,398	28,779	18,531	20,993	14,488	23,983	22,711	31,832	15,878	27,878
Crisis intervention and stabilization (non-ER)	667	832	494	1,032	541	808	363	884	745	973	635	908
Inpatient psychiatric treatment	6,652	9,046	4,941	8,694	11,803	15,243	9,131	16,323	4,840	6,134	4,048	6,098
Partial hospitalization/day treatment	5,746	6,366	4,598	8,227	5,154	5,445	4,978	5,340	5,499	5,294	5,497	6,003
Mental health consultation	6	7	6	6	582	683	504	782	421	507	373	534
Substance use screening and assessment	245	190	244	279	215	196	176	206	253	239	251	272
Wraparound	3,467	3,630	3,251	3,763	4,563	6,173	3,946	4,148	7,102	5,961	8,225	5,451
Therapeutic foster care	11,219	19,243	7,536	10,140	12,063	15,351	9,611	11,881	13,254	18,394	9,226	13,737
Substance use inpatient/residential	4,773	2,804	4,991	4,714	16,006	24,377	13,309	16,104	8,315	9,647	8,098	9,282
Respite	649	1,196	254	445	2,885	4,208	1,714	2,010	4,282	4,797	3,569	4,260
Supported housing	2,315	2,358	2,174	2,844	4,326	7,605	3,364	3,649	5,207	7,081	4,625	5,239
Transportation	0	-	-	-	912	915	817	1,139	229	282	185	380
Emergency room	1,162	1,238	987	1,360	162	189	148	178	179	201	170	196
Peer services	492	947	296	0	2,472	2,749	2,398	2,365	1,171	1,322	1,089	926
Home-based (e.g., in-home services)	$17,191	18,329	7,775	17,440	12,256	23,362	4,493	2,610	5,301	15,547	949	6,357
Activity therapies	$1,658	2,259	576	1,608	3,889	4,885	2,432	3,502	3,882	5,287	1,081	3,573
Telehealth	$495	1,010	251	147	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Multisystemic Therapy	$1,662	0	838	2,074	7,329	7,682	7,310	6,646	10,005	9,490	10,281	8,050

Mean Child Behavioral Health Expenditures by Service Type by Diagnosis (Exhibit 10c 1 and 2)

Children with Mood Disorder and Anxiety did not have the highest mean expenditures for any service type in either study year. Children with Conduct Disorder did not have the highest mean expenditure for any service type in 2008, but they claimed the highest mean expense in 2011 for both Wraparound and substance use inpatient/residential. Youth with a diagnosis of SUD had the highest mean expense for substance use outpatient in 2008, but they did not have the highest mean expense for any service type in 2011. Children with ADHD also did not have the highest mean expense for any service type in 2011, although they did experience the highest mean expense for therapeutic foster care and substance use inpatient/residential in 2008.

Children with Developmental Disabilities had the highest mean expense for the most service types in both study years (for eight of 28 service types). In both years, this list included: psychosocial rehabilitation, TCM, behavior management, and inpatient psychiatric. In 2008, the list also included Wraparound, respite, and activity therapy, which was not the case in 2011, when the list included therapeutic foster care, supported housing, and peer services. Children with a diagnosis of Psychosis had the highest mean expense in both study years for psychotropic medication, medication management, and ER. In 2008, they also had the highest mean expense for MST, which was not the case in 2011. However, in 2011, they claimed the highest mean expense for several other services as well, including outpatient, substance use screening and assessment, home-based services, and activity therapy. In 2008, children with PTSD had the highest mean expense for only a handful of services: outpatient, psychological testing, and group therapy. However, in 2011, they had the highest mean expense not only for group therapy and psychological testing but also for substance use outpatient (though no longer outpatient), residential treatment/therapeutic group homes, partial hospitalization/day treatment, mental health consultation, and MST.

In 2008, children with a diagnosis of "Other" had the highest mean expense for several service types, including screening/assessment/evaluation, family therapy, home-based, and partial hospitalization. That list narrowed to only two services in 2011: screening/assessment/evaluation and family therapy. Similarly, children with No Diagnosis had the highest mean expense for many service types in 2008, including: peer services, non-ER crisis services, case management, supported housing, substance use screening and assessment, and home-based, but that list narrowed to only non-ER crisis in 2011.

Exhibit 10c 1. Mean Child Behavioral Health Expenditures by Psychiatric Diagnoses, 2008

Service Type	2008										
	Mean Expenditures	ADHD	Conduct Disorder	Mood	Anxiety	PTSD	Devel. Disability	Psychosis	SUD Diagnosis	Other Diagnosis	No Diagnosis
Outpatient treatment (primarily individual)	729	821	862	825	798	1,017	812	1,012	746	1,003	357
Psychotropic medication	1,590	1,660	1,858	2,000	1,507	2,281	2,835	3,102	1,275	2,446	1,399
Screening/assessment/evaluation	215	237	239	240	222	265	280	311	256	314	142
Medication management	247	258	263	271	252	317	278	327	264	310	93
Family therapy/family education and training	476	512	542	512	507	599	506	539	418	608	244
Psychosocial rehabilitation	3,451	3,872	3,806	3,564	3,676	4,930	8,669	4,304	2,796	4,833	2,432
Substance use outpatient	1,009	1,032	1,059	1,042	981	1,180	930	1,083	1,465	1,142	713
Psychological testing	381	396	391	402	394	439	375	420	372	423	199
Initial service planning	130	134	128	119	118	128	303	130	119	134	104

Service Type	2008										
	Mean Expenditures	ADHD	Conduct Disorder	Mood	Anxiety	PTSD	Devel. Disability	Psychosis	SUD Diagnosis	Other Diagnosis	No Diagnosis
Case management	1,204	1,267	1,216	1,195	1,049	1,378	1,559	1,250	949	1,213	2,150
Group therapy	725	832	925	935	882	1,152	875	1,033	816	821	325
Targeted case management	1,331	1,304	1,339	1,322	1,517	1,697	2,611	1,349	1,382	1,540	712
Behavior management consultation and training/therapeutic behavioral support	3,588	2,623	3,945	2,716	2,457	2,621	9,932	2,730	3,537	3,212	6,086
Residential treatment/therapeutic group homes	18,531	18,199	20,908	18,513	15,946	24,724	27,468	19,442	16,164	24,697	8,880
Crisis intervention and stabilization (non-ER)	541	502	439	401	435	445	467	468	498	481	1,771
Inpatient psychiatric treatment	11,803	13,776	13,754	12,433	9,764	16,424	19,053	14,290	11,624	17,150	2,297
Partial hospitalization/day treatment	5,154	6,548	6,366	6,259	4,914	6,718	4,056	6,336	5,694	6,938	740
Mental health consultation	582	596	592	544	626	809	544	734	436	779	328
Substance use screening and assessment	215	170	181	173	169	184	176	191	207	180	226
Wraparound	4,563	5,252	4,759	4,819	4,994	5,337	7,172	5,786	3,611	5,429	2,911
Therapeutic foster care	12,063	16,034	14,997	14,481	12,893	14,507	11,972	14,560	8,883	13,224	5,950
Substance use inpatient/residential	16,006	21,548	19,608	18,762	16,243	21,118	17,621	20,354	12,772	21,274	9,343
Respite	2,885	2,335	2,440	2,269	2,203	1,815	4,870	3,068	1,195	2,281	2,282
Supported housing	4,326	3,768	5,174	3,940	4,403	4,844	28,195	11,082	8,208	5,211	39,468
Transportation	912	414	414	380	1,518	483	0	0	0	0	953
Emergency room	162	175	187	184	185	218	192	231	164	219	78
Peer services	2,472	2,082	2,262	2,237	2,123	2,009	2,010	2,925	2,815	2,353	3,679
Home-based (e.g., in-home services)	12,256	9,718	9,147	8,495	6,340	16,051	13,141	10,312	6,372	14,418	26,324
Activity therapies	3,889	4,292	3,627	4,026	3,840	3,489	5,129	4,168	2,203	4,132	4,186
Multisystemic Therapy	7,329	7,975	7,409	7,840	7,740	8,459	8,681	8,683	7,637	7,709	1,857

Exhibit 10c 2. Mean Behavioral Health Expenditures by Psychiatric Diagnoses, 2011

Service Type	2011										
	Mean Expenditures	ADHD	Conduct Disorder	Mood	Anxiety	PTSD	Devel. Disability	Psychosis	SUD Diagnosis	Other Diagnosis	No Diagnosis
Outpatient treatment (primarily individual)	827	901	964	904	859	1,076	1,066	1,124	803	1,036	543
Psychotropic medication	1,640	1,772	1,862	1,988	1,509	2,208	2,703	2,935	1,396	2,394	1,023
Screening/assessment/evaluation	213	232	239	238	223	276	282	301	255	334	149
Medication management	336	320	346	374	361	466	352	559	414	429	167
Family therapy/family education and training	457	489	499	483	473	562	533	524	413	591	318
Psychosocial rehabilitation	3,412	3,658	3,656	3,804	3,714	5,192	7,431	5,830	3,849	4,492	2,418
Substance use outpatient	1,624	1,718	1,774	1,733	1,588	1,880	1,374	1,745	1,716	1,458	1,502
Psychological testing	398	400	409	422	416	452	386	444	407	411	354
Initial service planning	287	291	322	325	326	544	443	418	383	396	126
Case management	812	914	812	752	719	848	1,074	665	523	748	588
Group therapy	675	830	865	831	781	874	795	844	742	654	293
Targeted case management	1,130	1,292	1,258	1,236	1,309	1,634	2,078	1,523	1,156	1,460	337
Behavior management consultation and training/therapeutic behavioral support	3,009	3183	3484	3546	3158	3805	6585	5208	3394	4197	1894
Residential treatment/therapeutic group homes	22,711	23,866	24,480	22,438	20,458	33,057	31,342	27,099	17,751	31,760	14,963
Crisis intervention and stabilization (non-ER)	745	712	772	740	752	861	752	1,059	857	806	1,613
Inpatient psychiatric treatment	4,840	5,714	5,978	5,001	5,356	7,868	9,071	7,058	5,214	8,030	2,422
Partial hospitalization/day treatment	5,499	7,327	7,247	6,630	5,559	7,792	4,935	7,143	4,610	7,227	772
Mental health consultation	421	447	426	427	464	666	472	645	385	535	217
Substance use screening and assessment	253	291	310	278	251	269	216	321	271	257	224
Wraparound	7,102	8,358	8,609	7,294	6,389	8,482	5,634	7,657	7,088	6,477	1,998
Therapeutic foster care	13,254	15,813	15,083	15,275	13,716	15,501	21,199	16,554	13,217	16,266	7,292
Substance use inpatient/residential	8,315	9,303	9,808	8,675	6,627	7,077	5,995	6,980	8,420	9,445	8,051
Respite	4,282	4,119	3,546	3,502	3,498	3,384	4,829	4,609	3,186	3,582	5,578
Supported housing	5,207	4,297	5,324	5,089	6,356	6,798	32,311	31,906	8,926	8,686	26,122
Transportation	229	190	206	242	236	332	232	292	438	199	473
Emergency room	179	199	208	201	202	247	224	256	186	249	136
Peer services	1,171	1,291	1,262	1,221	1,205	1,352	1,457	1,273	959	1,204	718
Home-based (e.g., in-home services)	5,301	3,767	3,384	9,417	5,675	11,499	2,972	11,545	2,196	7,438	3,330
Activity therapies	3,882	5,310	4,196	4,847	3,624	3,185	6,155	6,577	2,592	6,117	3,561
Multisystemic Therapy	10,005	11,045	10,460	11,033	10,424	11,409	7,526	10,183	9,922	10,053	4,897

Mean Child Behavioral Health Expenditures by Service Type by Race/Ethnicity (Exhibits 10d)

White children did not have the highest mean expense for any service type in 2011 and only for medication management and supported housing in 2008, although their mean expense for psychotropic medication was the second highest in both years. NH/PI children had the highest mean expense for psychotropic medication in both years and for medication management in 2011. Their mean expense for psychotropic medication was 7% higher than for children in general who received psychotropic medications. For White children, psychotropic medication mean expense was 5% higher than for children in general. NH/PI children also had the highest mean expense in both years for non-ER crisis services, and in 2011, but not 2008, for behavioral management and partial hospitalization.

In both 2008 and 2011, BL/AA children had the highest mean expense for screening/assessment/evaluation, substance use screening and assessment, substance use inpatient/residential, and Wraparound. In 2008, but not in 2011, they also had the highest mean expense for therapeutic foster care. Their mean expense for substance use inpatient/residential in 2011 ($10,378) was 29% higher than that of children in general who used this service, and their mean expense for Wraparound ($12,658) was 78% higher.

In 2011, AI/AN children had the highest mean expenditures for nearly 37% of the service types, compared to 27% of service types in 2008, including: family therapy (also highest in 2008), psychosocial rehabilitation (also highest in 2008), SUD outpatient, psychological testing, case management, group therapy, inpatient psychiatric treatment (also highest in 2008), supported housing, ER, activity therapy, and MST. Their 2011 mean expense for substance use outpatient was 46% higher than for youth in general who used this service; their mean expense for group therapy was 67% higher; their mean expense for inpatient psychiatric treatment was 20% higher, and their use of MST was 16% higher.

The only service for which Asian children had the highest mean expense in 2011 was mental health consultation, compared to 2008, when they had the highest mean expense for behavior management, respite, and MST.

In 2011, Hispanic/Latino children had the highest mean expense for respite and transportation, compared to 2008, when they had the highest mean expense for psychological testing, transportation, and peer services.

In 2011 and in 2008, NH/PI children had the highest mean expense for psychotropic medication. In 2011, they also had the highest mean expense for medication management (though not in 2008), behavioral management, non-ER crisis intervention, and partial hospitalization. In 2008, in addition to psychotropic medications, they had the highest mean expense for group therapy, non-ER crisis intervention, and activity therapy.

In 2011, the only service for which Hispanic/Latino children of more than one race had the highest mean expense was in-home services. In 2008, they had the highest mean expense for outpatient and mental health consultation.

In 2011, Multiracial children had the highest mean expense for outpatient, Targeted Case Management, residential treatment/group care, therapeutic foster care, and peer services. In 2008, they had the highest mean expense for SUD outpatient, case management, and ER. In 2011, Multiracial children had mean expenditures for residential treatment/group care that were 39% higher than for children in general who used residential treatment/group care.

Exhibit 10d. Mean Child Behavioral Health Expenditures by Service Type by Race/Ethnicity, 2008

Service Type	2008									
	Mean Expenditures	White	Black/ African American	American Indian/ Alaska Native	Asian	Hispanic or Latino	Native Hawaiian/ Pacific Islander	Hispanic/ Latino + one/more races	More than one race	Unknown
Outpatient treatment (primarily individual)	729	702	757	842	621	543	838	1,152	946	811
Psychotropic medication	1,590	1,650	1,444	1,403	1,443	1,247	1,729	1,560	1,713	1,986
Screening/assessment/evaluation	215	217	227	201	199	180	140	188	189	232
Medication management	247	257	241	244	192	237	216	213	204	230
Family therapy/family education and training	476	492	467	558	379	365	550	441	523	525
Psychosocial rehabilitation	3,451	3,395	3,873	4,566	2,666	1,635	2,831	2,107	3,744	3,889
Substance use outpatient	1,009	1,010	1,094	846	741	774	894	1,125	1,305	997
Psychological testing	381	375	360	439	360	449	346	360	355	378
Initial service planning	130	140	121	88	109	105	198	95	91	138
Case management	1,204	1,256	1,158	1,192	1,432	920	804	1,237	1,509	1,362
Group therapy	725	798	637	994	575	583	1,205	758	1,141	765
Targeted case management	1,331	1,433	1,383	2,118	1,675	460	1,432	1,582	2,086	1,196
Behavior management consultation and training/therapeutic behavioral support	3,588	3432	4635	2033	9861	2522	236	1908	311	3167
Residential treatment/therapeutic group homes	18,531	18,162	18,606	35,350	20,733	15,608	20,192	19,494	25,230	16,441
Crisis intervention and stabilization (non-ER)	541	406	691	642	1,053	331	1,501	779	1,276	1,066
Inpatient psychiatric treatment	11,803	12,622	11,164	16,179	11,672	8,943	10,793	6,018	7,097	15,310
Partial hospitalization/day treatment	5,154	4,570	6,084	10,043	2,264	3,049	2,461	3,325	5,116	5,586
Mental health consultation	582	468	569	528	873	274	491	998	937	595
Substance use screening and assessment	215	177	231	171	162	147	174	142	142	159
Wraparound	4,563	4,100	6,027	2,046	2,755	4,403	2,755	2,205	2,567	5,912
Therapeutic foster care	12,063	10,286	20,136	7,248	4,406	8,162	2,461	6,994	12,006	6,353
Substance use inpatient/residential	16,006	14,387	21,972	16,129	6,877	8,291	5,768	14,867	13,337	12,294
Respite	2,885	3,015	3,097	2,115	4,481	1,696	365	3,398	3,204	3,956
Supported housing	4,326	7,198	3,126	3,184	2,070	3,365	1,990	5,382	5,382	7,203
Transportation	912	782	0	0	0	895	0	0	0	1,090
Emergency room	162	164	168	159	149	141	132	147	174	159
Peer services	2,472	2,234	1,535	2,692	945	2,946	378	2,772	1,181	3,055
Home-based (e.g., in-home services)	12,256	4,570	6,084	10,043	2,264	3,049	2,461	3,325	5,116	5,586
Activity therapies	3,889	3,926	4,533	3,161	5,716	3,371	11,817	4,755	3,050	2,956
Multisystemic Therapy	7,329	7,818	7,252	6,080	13,930	6,957	0	8,983	5,837	7,895

Exhibit 10d. Mean Child Behavioral Health Expenditures by Service Type by Race/Ethnicity, 2011

Service Type	2011									
	Mean Expenditures	White	Black/ African American	American Indian/ Alaska Native	Asian	Hispanic or Latino	Native Hawaiian/ Pacific Islander	Hispanic/ Latino + one/more races	More than one race	Unknown
Outpatient treatment (primarily individual)	827	785	958	994	843	566	855	1,020	1,056	799
Psychotropic medication	1,640	1,730	1,487	1,438	1,388	1,307	1,754	1,385	1,556	1,902
Screening/assessment/evaluation	213	210	237	202	202	182	153	191	185	213
Medication management	336	317	301	380	553	533	869	209	195	312
Family therapy/family education and training	457	468	450	469	387	399	446	411	462	500
Psychosocial rehabilitation	3,412	3,556	3,334	4,221	4,039	3,311	3,701	1,828	2,690	3,647
Substance use outpatient	1,624	1,480	1,905	2,373	1,486	1,550	1,199	1,657	1,030	1,492
Psychological testing	398	383	391	539	412	444	441	369	378	417
Initial service planning	287	274	270	208	398	389	548	168	159	332
Case management	812	875	811	924	543	387	837	299	570	938
Group therapy	675	731	623	1,126	517	427	613	548	934	839
Targeted case management	1,130	1,261	1,270	1,372	1,072	699	894	1,411	1,769	1,133
Behavior management consultation and training/therapeutic behavioral support	3,009	3016	3286	2803	5386	3019	7280	2535	2136	2767
Residential treatment/therapeutic group homes	22,711	22,549	23,035	28,815	22,204	16,909	26,513	24,679	31,611	22,607
Crisis intervention and stabilization (non-ER)	745	679	786	1,041	957	859	1,206	630	1,081	808
Inpatient psychiatric treatment	4,840	4,986	4,967	5,813	4,073	3,439	5,263	4,407	5,661	5,314
Partial hospitalization/day treatment	5,499	4,567	6,894	7,346	5,701	6,348	9,746	2,773	6,323	4,490
Mental health consultation	421	307	429	335	1,006	262	639	828	556	352
Substance use screening and assessment	253	263	335	173	153	131	130	186	138	157
Wraparound	7,102	5,267	12,658	3,431	6,257	7,062	8,734	4,591	2,762	5,715
Therapeutic foster care	13,254	13,436	15,488	16,069	11,337	8,432	8,953	19,752	27,612	8,370
Substance use inpatient/residential	8,315	8,341	10,378	2,752	6,046	8,155	2,043	7,392	5,682	7,988
Respite	4,282	3,892	4,669	2,176	3,441	8,818	3,628	5,296	6,423	5,158
Supported housing	5,207	8,886	3,344	21,328	2,280	4,587	3,237	5,809	3,588	15,543
Transportation	229	211	205	293	66	552	131	211	150	198
Emergency room	179	182	182	203	173	147	174	188	190	180
Peer services	1,171	1,187	997	885	1,208	696	113	1,214	1,309	1,246
Home-based (e.g., in-home services)	5,301	8,602	1,409	6,709	20,826	6,297	0	28,912	19,064	5,060
Activity therapies	3,882	4,098	4,213	4,738	4,676	1,728	0	2,674	3,657	2,792
Multisystemic Therapy	10,005	9,191	11,312	11,596	7,518	9,943	3,550	10,636	8,928	8,709

Highlights and Implications of the Data

The sizeable decrease in mean expense for inpatient psychiatric hospitalization (even as utilization increased, as noted in an earlier section) suggests lower average lengths of stay, which may be attributable to more children being enrolled in Medicaid managed care arrangements, or children leaving inpatient psychiatric treatment and moving to residential treatment where mean expense increased (also, in many states in 2011, residential treatment/group care remained in FFS while inpatient hospitalization was in managed care), or states are using alternatives such as Wraparound, respite, and MST, mean expense for which increased. The decrease in mean expense for in-home services but increased mean for MST may suggest that states are moving to implement evidence-based, in-home models such as MST.

The consistently higher mean expenditures for males than females for virtually all service types suggests that boys are staying longer in services, which could have either negative or positive connotations, often depending on the service type. For example, appreciably higher mean expense for residential treatment/group care for males and for psychotropic medication use suggests opportunities to better manage care for this population and offer more effective home and community alternatives. On the other hand, higher mean expense among boys for use of key HCBS, such as respite, psychosocial rehabilitation, peer services, and activity therapy, may indicate that girls are not receiving the same intensity of involvement with these services.

It should be concerning that, in 2011, children, ages 6-12, had the highest mean expenditures for residential treatment/group care, inpatient psychiatric treatment, and partial hospitalization/day treatment, suggesting that younger children may be staying longer in the most restrictive services.

One can speculate as to whether the lower intensity of spending in 2011 for children in foster care on inpatient psychiatric treatment and residential treatment/group care compared to 2008 correlated with their higher intensity of spending on psychosocial rehabilitation and behavioral management, and with state efforts over this period to reduce lengths of stay in facility-based care for children in child welfare. Similarly, one can speculate as to whether the increased intensity of spending on children on SSI/disability for inpatient and residential correlated with their lower intensity of spending on psychosocial rehabilitation and behavior management over the same period.

The similarity in high mean expense across virtually all service types between the foster care and SSI/disability child populations is striking and has implications for how states organize Medicaid delivery systems for both populations. Very few children in foster care — about 6% — receive SSI/disability, so their high mean expense is not being driven by the SSI/disability population among their ranks (though it has been noted that more children in foster care would certainly be eligible for SSI/disability if application were made). [20]As has been demonstrated repeatedly, the foster care population is very high-need, regardless of whether they receive SSI/disability or not, and the range of BHS needed for both the foster care and SSI/disability populations is quite similar. The fact that the SSI/disability population has a considerably higher mean expense for in-home services probably has more to do with their eligibility for certain home- and community-based waiver programs that may not encompass the foster care population to the same extent.

The higher mean expense among TANF-enrolled children for Wraparound and MST in 2011 may suggest implementation of these programs with greater fidelity for the TANF population, or that TANF-enrolled children may have to demonstrate a higher level of acuity to access these services and then remain in services longer.

The relatively higher mean expense for many service types for children with Developmental Disability may be attributable to a greater level of need and, perhaps, to their enrollment HCBS waiver programs in which spending on home and community services typically is higher than in non-HCBS waiver programs. It makes sense that children with Psychosis have the highest mean expense for psychotropic medication use, given that they are receiving predominantly antipsychotics, which are expensive; their high expense argues for closer monitoring to ensure against overuse. The fact that children with PTSD had the highest mean expenditures for an increasing number of service types between 2008 and 2011 may be related to an increasing recognition among providers of the role of trauma and the need for an intensity of therapeutic approaches. The noticeable reduction in the service types for which children with No Diagnosis had the highest mean expense may be due to any number of factors, such as better data entry in the MAX system, greater scrutiny on the part of Medicaid MCOs to ensure diagnoses are documented, and perhaps more willingness on the part of providers and families for children to be given a behavioral health diagnosis.

In general, much more needs to be learned about why mean expenditures differ across racial and ethnic groups of children. Medicaid claims and encounter data point to what these differences are but not to why they are occurring. For example, it is unclear why NH/PI and White children consistently have had the highest mean expense for psychotropic medication use. Their relatively higher mean expense does not seem to be associated with the types of service they used. To illustrate, in 2008, NH/PI children had the highest rate of use of inpatient psychiatric hospitalization at 5.9% and ER at 10.2%, which could have been a factor in that year for their higher mean expense for psychotropic medications; however, in 2011, when they still had the highest mean expense for medication use, they had the lowest utilization rate for psychiatric hospitalization and one of the lowest rates for ER use.

The data suggest that Multiracial children, who have notably higher mean expenditures for residential treatment/group care, seem to be staying longer in residential care, which is concerning. BL/AA children, with their higher mean expense for substance use inpatient/residential, may be staying longer in substance use residential care. However, in the case of substance use inpatient/residential, it is not clear whether longer lengths of stay are a concerning or a positive factor; historically, youth have had difficulty accessing substance use inpatient/residential treatment, which, unlike residential treatment in general, is recommended by CMS as a core component in the Medicaid SUD benefit for children. [21]

There were very few services for which Asian and Hispanic/Latino children had the highest mean expense, which may be a cause for concern if it is attributable to their receiving a lower intensity of services than other children.

While AI/AN children are a small cohort of children using BHS, they had relatively higher mean expense for more service types than any other group of children, including for inpatient psychiatric hospitalization, which ran 20% higher than for children in general. Not only with respect to mean expense, but across the board, the *Children's Faces of Medicaid* analysis indicates that AI/AN children are a very high-risk group, using a broader range of services at relatively higher intensity levels than that of other cohorts.

Physical Health Utilization and Expenditures among Children Using Behavioral Health Services

What the Data Show

Use of Physical Health Services (Exhibit 11)

The study analyzed use of physical health services by a subset of children who used BHS and who had six months or more continuous enrollment in FFS Medicaid, which included about 849,000 children in 2008 (42% of the overall study population) and about 1 million children in 2011 (40% of the larger study population). Exhibit 11 shows the breakdown of physical health services used by this subset in 2008 and 2011. Among physical health services used, children were most likely to use non-psychiatric pharmacy (used by 83% of children in 2008 and nearly 90% of children in 2011), outpatient (used by about 80% in 2008 and 88% in 2011), and laboratory/radiology services (used by nearly two-thirds in both years). Over half — 55% in 2008 and 58% in 2011 — received dental services. About 40% used ER services for non-psychiatric reasons in both years; about 20% used TCM for non-psychiatric reasons in 2011, up from 18% in 2008, and close to 16% used inpatient services for non-psychiatric reasons in 2011, up from about 15% in 2008. It should be noted that the data on this subset may overstate the use of physical health services for the larger population of 2 million children in 2008 and 2.5 million children in 2011 who used BHS. This is because the subset does not include children in Medicaid managed-care arrangements and includes only children with six months or more FFS enrollment, who may be both a more high-need population and may lack medical homes more likely to be associated with a managed care population. For example, the 40% ER utilization rate would seem high for a managed care-enrolled population.

Exhibit 11. Utilization of Physical Health Services by Service Type for Children who used Behavioral Health Services,* 2008 and 2011

Children's Physical Health Service	2008		2011	
	N of Children	% of Children	N of Children	% of Children
Inpatient	124,070	14.6%	163,192	15.8%
Outpatient	676,138	79.6%	905,190	87.7%
Laboratory/ Radiology	563,019	66.3%	686,195	66.5%
Home Health	16,365	1.9%	15,445	1.5%
Emergency Department	338,749	39.9%	422,405	40.9%
Pharmacy	703,725	82.9%	920,797	89.2%
Dental	464,523	54.7%	602,350	58.4%
Transportation	135,498	16.0%	113,131	11.0%
Personal Care Services	13,773	1.6%	18,601	1.8%
Targeted Case Management	155,428	18.3%	210,953	20.4%
Rehabilitation	53,308	6.3%	48,675	4.7%
Physical, Occupation, or Speech Therapy	64,886	7.6%	89,547	8.7%
Private Duty Nursing	7,174	0.8%	17,628	1.7%
All Services	**849,232**	**100.0%**	**1,084,267**	**100.0%**

**Includes 1,084,267 children enrolled in FFS with 6 months or more continuous enrollment in 2011 and 849,232 children in 2008.*

Physical Health Service Use Total Expenditures (Exhibit 11a)

Exhibit 11a shows total expense by service type associated with physical health services used by children receiving BHS in 2008 and 2011. In 2008, outpatient services accounted for the single largest expenditure at about $1 billion, about 23% of total physical health expense. However, in 2011, spending on non-psychiatric inpatient services accounted for the largest single expense, representing about 21% of total expense, while spending on outpatient dropped to about $716 million, or 14% of total physical health expense. In 2011, the next two largest single expense items were non-psychiatric pharmacy, at about 15% of total physical health expense and used by 89% of children, and outpatient services, at about 14% of total physical health expense and used by 88% of children.

Exhibit 11a. Total Physical Health Expenditures by Service Type for Children Who Used BHS,* 2008 and 2011

Children's Physical Health Service	2008	2011
Inpatient	$852,619,392	$1,067,666,787
Outpatient	$1,056,477,120	$716,779,493
Laboratory/ Radiology	$187,602,976	$216,676,266
Home Health	$173,934,624	$185,537,131
Emergency Department	$99,002,240	$127,299,071
Pharmacy	$612,741,568	$766,854,981
Dental	$201,233,024	$259,003,233
Transportation	$61,747,324	$72,415,396
Personal Care Services	$163,857,520	$179,088,618
Targeted Case Management	$142,356,272	$107,348,805
Rehabilitation	$274,081,088	$179,741,681
Physical, Occupation, or Speech Therapy	$88,515,200	$145,530,017
Private Duty Nursing	$86,131,856	$55,324,842
All Services	**$4,548,987,392**	**$5,141,344,449**

**Includes 1,084,267 children enrolled in FFS with 6 months or more continuous enrollment in 2011 and 849,232 children in 2008.*

Rates of Physical Health Service Use by Type of Service, by Aid Category (Exhibit 11b)

Exhibit 11b shows the rate of service use in 2008 and 2011 for each physical health service type, broken down by aid category. Among all aid categories, children in foster care who used BHS had the highest rate of use of non-psychiatric inpatient services in 2011, with about 20% of these children using inpatient services, higher than that of children on SSI/disability at about 18% in 2011; however, in 2008, children on SSI/disability had the highest rate of inpatient use, with about 17% using inpatient compared to 14% of children in foster care. TANF-enrolled children had the lowest rate of inpatient use in both years. Children in foster care also had a higher rate of use of dental services in both study years, with 62% receiving dental services in 2011, down from about 64% in 2008, compared to 55% of all children in 2008 and 58% in 2011. Children in foster care had the lowest rate of use of non-psychiatric ER in both study years, with about 34% using ER in 2011, up from 33% in 2008, compared to 43% of children on SSI/disability and 42% of children on TANF. They also had the lowest rates in both years of physical, occupational, and speech therapy and private-duty nursing.

Children on SSI/disability had the highest rates of use for most physical health services in both study years, including: lab/radiology, home health, ER, pharmacy, medical transportation, personal care services, non-psychiatric TCM, rehabilitation, and physical, occupational, and speech therapy. There was no physical health service for which they had a notably lower rate of use, although they did have a slightly lower rate of use of dental services than children in general (55.8% compared to 58.4% in 2011).

Children enrolled through TANF had slightly higher rates of use of outpatient services in both study years.

Exhibit 11b. Rates of Physical Health Service Use by Type of Service, by Aid Category, for Children Who Used BHS,* 2008 and 2011

Children's Physical Health Service	2008				2011			
	Overall	TANF	Foster Care	SSI/Disabled	Overall	TANF	Foster Care	SSI/Disabled
Inpatient	14.6%	13.6%	14.0%	17.2%	15.8%	13.9%	20.3%	17.9%
Outpatient	79.6%	81.6%	76.8%	77.0%	87.7%	88.7%	86.5%	85.8%
Laboratory/ Radiology	66.3%	66.1%	65.9%	67.0%	66.5%	65.7%	65.3%	69.4%
Home Health	1.9%	0.8%	1.3%	4.9%	1.5%	0.7%	1.0%	3.9%
Emergency Department	39.9%	41.8%	32.4%	40.6%	40.9%	41.9%	33.6%	43.1%
Pharmacy	82.9%	82.8%	80.0%	84.9%	89.2%	86.7%	89.8%	95.7%
Dental	54.7%	54.9%	63.7%	48.3%	58.4%	58.4%	62.0%	55.8%
Transportation	16.0%	14.9%	12.9%	20.3%	11.0%	9.6%	9.3%	15.9%
Personal Care Services	1.6%	0.4%	1.0%	4.8%	1.8%	0.5%	1.1%	5.9%
Targeted Case Management	18.3%	15.5%	20.8%	23.0%	20.4%	18.5%	22.9%	24.0%
Rehabilitation	6.3%	3.8%	7.2%	11.2%	4.7%	3.7%	5.7%	7.0%
Physical, Occupation, or Speech Therapy	7.6%	7.1%	5.7%	10.0%	8.7%	8.3%	6.1%	11.5%
Private Duty Nursing	0.8%	0.8%	0.5%	1.1%	1.7%	2.0%	0.8%	1.6%
All Services	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

**Includes 1,084,267 children enrolled in FFS with 6 months or more continuous enrollment in 2011 and 849,232 children in 2008.*

Breakdown of Physical Health Service Use and Total Expenditures by Aid Category (Exhibit 11c)

Exhibit 11c indicates the composition by aid category of the population using physical health services and associated expense. As noted earlier, children on SSI/disability had the highest rate of use of most physical health services, and they also used a disproportionate share of physical health dollars in both study years. In 2011, they represented less than a quarter of children who used physical health services, but they consumed over half of total dollars spent. Their share of spending was disproportionately high for every physical health service type (except for dental services), and in many cases, the disproportionality was notable, for example, for inpatient, lab/radiology, home health, pharmacy, TCM, rehabilitation, and private-duty nursing. In contrast, children in foster care, who represented 15% of those using physical health services in 2011, used only 12% of total physical health spending, and children on TANF, who represented 62% of those using physical health services, consumed only 34.5% of total physical health dollars.

Exhibit 11c. Breakdown of Physical Health Service Utilization and Expenditures by Aid Category for Children Who Used BHS,* 2008 and 2011

Children's Physical Health Service	2008						2011					
	TANF		Foster Care		SSI/Disabled		TANF		Foster Care		SSI/Disabled	
	Utilization	Expense	Utilization	Expense	Utilization	Expense	Utilization	Expense	Utilization	Expense	Utilization	Expense
Inpatient	53.8%	37.9%	16.3%	16.6%	30.0%	45.5%	54.8%	37.6%	19.6%	14.1%	25.6%	48.4%
Outpatient	59.1%	46.6%	16.3%	26.7%	24.5%	26.7%	62.8%	53.5%	15.0%	12.0%	22.2%	34.5%
Laboratory/ Radiology	57.5%	47.5%	16.8%	14.7%	25.7%	37.8%	61.4%	45.6%	14.9%	12.7%	23.7%	41.6%
Home Health	24.1%	6.4%	11.4%	12.6%	64.4%	81.0%	30.3%	9.6%	10.2%	11.5%	59.5%	78.9%
Emergency Department	60.4%	55.1%	13.7%	11.8%	25.8%	33.1%	63.6%	57.2%	12.5%	11.7%	23.9%	31.1%
Pharmacy	57.6%	36.0%	16.3%	14.1%	26.0%	49.8%	60.4%	36.6%	15.3%	13.0%	24.4%	50.4%
Dental	57.9%	58.3%	19.7%	19.3%	22.4%	22.4%	62.2%	60.9%	16.1%	14.8%	21.7%	24.3%
Transportation	53.9%	42.9%	13.7%	14.9%	32.4%	42.2%	54.1%	46.6%	12.9%	10.6%	33.0%	42.8%
Personal Care Services	14.5%	9.5%	10.5%	10.6%	75.0%	80.0%	16.6%	12.6%	9.1%	9.7%	74.3%	77.7%
Targeted Case Management	48.8%	27.4%	19.3%	26.2%	32.0%	46.4%	56.2%	33.2%	17.1%	21.2%	26.7%	45.6%
Rehabilitation	35.3%	18.4%	19.4%	28.2%	45.3%	53.4%	48.2%	30.8%	18.3%	16.5%	33.5%	52.8%
Physical, Occupation, or Speech Therapy	53.9%	45.0%	12.7%	10.8%	33.4%	44.2%	59.2%	49.5%	10.6%	7.8%	30.2%	42.8%
Private Duty Nursing	57.4%	15.0%	9.6%	7.3%	33.0%	77.7%	71.6%	27.0%	7.0%	9.3%	21.4%	63.7%
All Services	**57.7%**	**34.0%**	**16.9%**	**18.7%**	**25.4%**	**47.3%**	**62.1%**	**34.5%**	**15.2%**	**12.4%**	**22.7%**	**53.1%**

**Includes 1,084,267 children enrolled in FFS with 6 months or more continuous enrollment in 2011 and 849,232 in 2008.*

Mean Physical Health Expenditures (Exhibit 11d)

Exhibit 11d shows mean physical health expenditures for children who used BHS, in total, and by service type and broken down by aid category for 2008 and 2011. The overall mean expenditure for physical health services among children who used BHS in 2011 was $4,980, down 7% from the 2008 mean of $5,357. The physical health mean expense was lower in both years than the mean expenditure for BHS, which was $5,517 in 2011, as discussed earlier. However, the mean physical health expense was notably higher in both years for children who used BHS than the mean physical health expense of children in Medicaid who did not use behavioral health care (estimated, for all services, at $2,492 in 2011.[22] The Agency for Healthcare Research and Quality estimated that the mean expense for any health expense of all U.S. civilians, including adults and the elderly, was $4,839 in 2010, which is lower than the mean expense in either 2008 or 2011 for physical health services only, not including behavioral health, for children who used behavioral health care.[23]

Children on SSI/disability had the highest overall mean expense for physical health services use in both study years: $11,649 in 2011, a 17% increase over the 2008 mean expense of $9,983. The mean physical health expense of children on SSI/disability in 2011 was 134% higher than that of children in general who used BHS. Their overall mean expense for physical health care was nearly three times higher than for children in foster care ($4,058) and over four times higher than children enrolled through TANF ($2,770). Mean physical health expense for children in foster care, while not nearly as high as that of children on SSI/disability, was 46% higher than that of children on TANF.

Children on SSI/disability had mean expenditures for non-psychiatric inpatient services that were 88% higher than for children in general, outpatient service use mean expense that was 55% higher, lab and radiology services mean expenditures that were 76% higher, home health mean expense that was 33% higher, pharmacy mean expenditures that were over 100% higher, rehabilitation mean expense that was 57% higher, and private-duty nursing mean expense that was nearly 200% higher. Children in foster care had relatively comparable mean physical health expenditures to children on TANF for about half the service types; their mean expense was notably higher for home health, pharmacy, personal care, TCM, rehabilitation, and private-duty nursing.

Physical health mean expense went down or stayed the same between 2008 and 2011 for virtually all services except home health, which increased 13%; medical transportation, which increased 40%, and physical, occupational, and speech therapy, which increased 19%.

Exhibit 11d. Mean Physical Health Expenditures by Service Type for Children Who Used BHS,* by Aid Category, 2008 and 2011

Children's Physical Health Service	2008				2011			
	Overall	TANF	Foster Care	SSI/Disabled	Overall	TANF	Foster Care	SSI/Disabled
Inpatient	$6,872	$4,845	$7,024	$10,428	$6,542	$4,487	$4,706	$12,334
Outpatient	$1,563	$1,231	$2,558	$1,700	$792	$675	$635	$1,229
Laboratory/ Radiology	$333	$275	$292	$490	$316	$235	$269	$555
Home Health	$10,628	$2,831	$11,748	$13,352	$12,013	$3,792	$13,544	$15,931
Emergency Department	$292	$266	$250	$375	$301	$271	$283	$392
Pharmacy	$871	$544	$753	$1,668	$833	$504	$708	$1,725
Dental	$433	$436	$425	$432	$430	$421	$395	$481
Transportation	$456	$363	$494	$594	$640	$551	$525	$832
Personal Care Services	$11,897	$7,782	$11,963	$12,681	$9,628	$7,305	$10,250	$10,071
Targeted Case Management	$916	$514	$1,248	$1,329	$509	$300	$632	$869
Rehabilitation	$5,141	$2,689	$7,467	$6,053	$3,693	$2,358	$3,323	$5,814
Physical, Occupation, or Speech Therapy	$1,364	$1,138	$1,157	$1,809	$1,625	$1,359	$1,187	$2,301
Private Duty Nursing	$12,006	$3,138	$9,141	$28,263	$3,138	$1,184	$4,171	$9,342
All Services	**$5,357**	**$3,156**	**$921**	**$9,983**	**$4,980**	**$2,770**	**$4,058**	**$11,649**

**Includes 1,084,267 children enrolled in FFS with 6 months or more continuous enrollment in 2011 and 849,232 in 2008.*

Highlights and Implications of the Data

Most children who used BHS in 2011 used relatively routine physical health services — outpatient, non-psychiatric pharmacy, and labs/radiology services. However, they used all physical health services at a higher intensity level than children in Medicaid who did not use BHS, with their mean physical health expense twice that of children who did not use BHS. While children who used BHS have considerably fewer and less costly comorbid physical health conditions than adults with serious mental illness, they are not as healthy as children in Medicaid who do not use BHS, and children in Medicaid are not as healthy as children in general. Children who used BHS also had a high rate of ER use for non-psychiatric reasons (41% used ER), raising the question as to whether this FFS subset population may be lacking medical homes and using the ER for non-emergent care. Efforts to improve the integration of physical and behavioral health care for this population clearly are important. At the same time, it is essential that federal and state policymakers recognize that child utilization and expenditure patterns, family issues, and multi-system involvement differ from those of adults and require care integration approaches, such as health homes, that are customized to their needs and not simply replicas of adult-oriented approaches.

The SSI/disability population, though small compared to the number of children in TANF, had considerably higher rates of use of virtually all physical health services, including routine care, specialty, rehabilitation, and support services, than either TANF-enrolled children or, for most services, children in foster care as well. They represented less than a quarter of children who used physical health services in 2011 but consumed over half of total dollars spent. Their mean physical health expenditures were nearly three times higher than for children in foster care and over four times higher than for children enrolled through TANF. Effective care integration approaches are especially critical for the SSI/disability population, who also have considerably more, and more expensive, comorbid health conditions than either the TANF or foster care populations.

Mean physical health expense for children in foster care, while not nearly as high as that of children on SSI/disability, was nonetheless 46% higher than that of children on TANF. In addition, children in foster care had the highest rate of use of inpatient services for physical health reasons in 2011, although their mean inpatient expense at $4,706 in 2011 was similar to that of children in the TANF population ($4,487) and significantly lower than that of children on SSI/disability who used inpatient services ($12,334), suggesting shorter lengths of stay and, relatively speaking, less complicated inpatient care than the SSI/disability population. This suggestion is consistent, too, with the higher rates of chronic health conditions in the SSI/disability child population in comparison to either the foster care or TANF cohorts.

Service Utilization and Expenditures by Chronic Illness and Disability Payment System

What the Data Show

As noted in the 2005 data analysis, many states and Medicaid health plans use predictive modeling tools for adult populations to identify the degree of burden represented by chronic health conditions, corresponding health expenditures, and potential intervention opportunities to reduce morbidity and associated expense. The Chronic Illness and Disability Payment System (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.

It is more challenging to try to measure "chronic illness" in children. Claims data are not designed to capture what percentage of physical health expenditures are routine, what percentage goes for acute illness, and what, truly, is for chronic physical health needs. To add to the complexity, the words "chronic illness" and "comorbidity" are frequently interchanged in discussions of health service use. For adults, there is not much difference, in that most comorbid conditions in adults are chronic. But children are mostly healthy, and when they get sick, they typically get better. For those reasons, looking for ways to reduce unnecessary physical health expense in children requires differentiated information that can lead to specifically targeted prevention activities (i.e., immunizations) and other interventions to reduce the likelihood of acute illness becoming chronic, and to minimize morbidity when chronic illness is truly present.

For the *Children's Faces of Medicaid* analyses, the CDPS methodology was applied to a pediatric sub-population within the overall Medicaid data set that had at least six months of continuous enrollment in a FFS system. This sample included 837,131 children in 2005, or about 43% of the total study sample of 1.9 million children using BHS in 2005; 849,232 children in 2008, or about 42% of the 2 million children using BHS in 2008; and 1,084,267 children in 2011, or about 40% of the 2.6 million children receiving BHS in 2011.

Results in Exhibit 12 indicate that most children (roughly 60% in each of the study years) who used BHS did not have a comorbid chronic medical condition. However, between 2005 and 2011, the percentage of children with no chronic health condition declined by 3%, while there were increases between 2005 and 2011 in the percentage of children with one or more chronic health conditions, which seems consistent with other reports that chronic health conditions in children are increasing.[24] Depending on the criteria, it is estimated that between 10-30% of children are affected by at least one chronic health condition[25], and children in poverty, as well as certain racial groups, such as BL/AA children, are at higher risk.[26] The *Children's Faces of Medicaid* analysis has found that about 40% of children in Medicaid who used BHS had at least one chronic health condition. Most (26%) had one chronic condition, which was most likely to be asthma. The percentage of children with more than one chronic condition dropped considerably, with about 8% having two.

Exhibit 12. Frequency of CDPS Categories among Children Using BHS in Medicaid, 2005, 2008, and 2011

No. of CDPS Categories	2005		2008		2011	
	No. of Children	% of Total	No. of Children	% of Total	No. of Children	% of Total
0	520219	62.1%	475,316	56.0%	651,952	60.1%
1	219846	26.3%	237,555	28.0%	284,365	26.2%
2	66449	7.9%	83,862	9.9%	92,299	8.5%
3	20012	2.4%	30,197	3.6%	32,072	3.0%
4	6444	0.8%	12,292	1.4%	12,795	1.2%
5	2412	0.3%	5,476	0.6%	5,594	0.5%
6	1028	0.1%	2,563	0.3%	4,045	0.4%
7+	721	0.1%	1,971	0.2%	1,145	0.1%
Total	**837131**	**100.0%**	**849,232**	**100.0%**	**1,084,267**	**100.0%**

Exhibit 12a shows the breakdown by CDPS category for children with chronic health conditions overall and by aid category in 2005 and 2011. As noted, pulmonary conditions, primarily asthma, represented the largest percentage of children with chronic health conditions in both years (12.6% in 2005 and 13.3% in 2011), followed by skeletal conditions, primarily fractures, about 8% in both years. The frequency of chronic and/or expensive conditions typically found in adults with serious mental illness, such as cancer, diabetes, and cerebrovascular disease, is comparatively rare in children who use BHS.

Children on SSI/disability have appreciably higher rates than either TANF-enrolled children or those in foster care of virtually every chronic health condition in the CDPS typology, with the one notable exception being substance use, where rates are higher both for the foster care and the TANF populations.

Of the 17 CDPS categories of chronic conditions, children in foster care have higher rates than children on TANF for 59% of them, including: cardiovascular, skeletal (fractures), central nervous (convulsions/epilepsy), renal (incontinence), substance use, developmental disability, metabolic disorders (lack of expected normal physiological development), eye, cerebrovascular, and infectious conditions. Children enrolled through TANF have higher rates than children in foster care of pulmonary conditions (asthma), gastrointestinal conditions, diabetes, skin conditions, and cancer (in 2011, not in 2005).

Of the 17 CDPS categories, there were increases in the frequency of 10 conditions (59% of conditions overall) between 2005 and 2011, including: cardiovascular (3% increase), pulmonary (6% increase), gastrointestinal (33% increase), diabetes (13% increase), skin conditions (6% increase), renal (16% increase), cancer (25% increase), developmental disability (13% increase), metabolic (45% increase), and cerebrovascular (150% increase). There was no change in the frequency of skeletal, central nervous system, substance use, genital, eye, infectious, or hematological conditions between 2005 and 2011.

Exhibit 12a. Frequency of CDPS Categories among Children Using BHS in Medicaid by Aid Category, 2005 and 2011

	2005					2011				
CDPS Category	**Overall**	**TANF**	**Foster Care**	**SSI/ Disabled**	**Most common diagnostic category in the disabled population**	**Overall**	**TANF**	**Foster Care**	**SSI/ Disabled**	**Most common diagnostic category in the disabled population**
Cardiovascular	3.4%	2.8%	3.4%	4.9%	Essential hypertension	3.5%	2.6%	3.1%	6.3%	Essential hypertension
Skeletal	8.2%	7.7%	7.7%	9.6%	Patella / Humerus Fracture	8.2%	7.2%	7.4%	11.3%	Patella / Humerus Fracture
Central Nervous System	5.3%	3.0%	4.0%	11.6%	Convulsions / Epilepsy	5.3%	2.9%	3.7%	13.0%	Convulsions / Epilepsy
Pulmonary	12.6%	12.8%	10.2%	14.2%	Asthma	13.3%	12.7%	10.5%	16.5%	Asthma
Gastrointestinal	3.3%	3.1%	2.6%	4.2%	Diseases of the Esophagus	4.4%	3.8%	3.4%	7.0%	Diseases of the Esophagus
Diabetes	0.8%	0.7%	0.6%	1.1%		0.9%	0.7%	0.7%	1.4%	
Skin	5.3%	5.4%	4.6%	5.7%	Cellulitis	5.6%	5.5%	4.6%	6.3%	Cellulitis
Renal	3.1%	2.0%	3.4%	5.2%	Incontinence	3.6%	2.2%	3.1%	7.9%	Incontinence
Substance abuse	2.4%	2.3%	3.6%	1.6%	Alcohol / drug dependence	2.4%	2.4%	3.4%	1.6%	Alcohol / drug dependence
Cancer	0.4%	0.3%	0.4%	0.7%		0.5%	0.3%	0.2%	1.1%	
Developmental Disability	3.8%	1.0%	2.6%	11.2%	Mild Mental Retardation	4.3%	1.3%	2.6%	13.5%	Mild Mental Retardation
Genital	0.9%	1.0%	1.0%	0.8%		0.9%	0.9%	0.8%	0.9%	
Metabolic	4.2%	2.5%	4.3%	8.0%	Lack of expected normal physiological development in childhood	6.1%	4.2%	4.9%	12.0%	Lack of expected normal physiological development in childhood
Eye	0.5%	0.3%	0.5%	0.7%		0.5%	0.4%	0.5%	1.0%	
Cerebrovascular	0.2%	0.1%	0.2%	0.5%		0.5%	0.3%	0.4%	1.1%	
Infectious	0.8%	0.7%	0.8%	1.2%		0.8%	0.6%	0.7%	1.1%	
Hematological	0.7%	0.5%	0.7%	1.1%		0.7%	0.5%	0.5%	1.5%	

Highlights and Implications of the Data

Application of the CDPS methodology to the population of children who used BHS indicates that this population does not have the same high rates of comorbid chronic health conditions as adults with serious mental illness, and, among those who do have a chronic health condition, most have no more than one, most likely asthma. On the other hand, this population has higher rates of chronic health conditions than children in general, as well as higher rates of certain conditions, such as lack of expected normal physiological development and mild mental retardation, that are concerning. These data suggest the importance of a coordinated, trauma-informed approach to both physical and behavioral health care to understand the effect that adverse childhood experiences may be playing in the occurrence and/or exacerbation of chronic, comorbid conditions among children who use BHS.

Many questions reside within the variations displayed; additional study of such variations could reveal important differences in service utilization profiles within CDPS groupings, or, perhaps, differences in adherence, or predisposing population characteristics, between aid categories. Further research is needed to increase our understanding of what drives these differences, to inform the design of interventions that can improve quality of care for children while reducing unnecessary expense.

Psychotropic Medication Use

What the Data Show

Psychotropic Medication Utilization Rates (Exhibit 13)

As Exhibit 13 shows, the percent of children in the Medicaid population who used psychotropic medication grew 16% between 2005 and 2011, from 5.8% of children receiving medication in 2005, to 6% in 2008, to 6.7% in 2011. While the number of children in Medicaid increased 11% between 2005 and 2011, the number receiving psychotropic medication increased 28%, with over two million children receiving psychotropic medication in 2011.

Psychotropic Medication Use by Age Group (Exhibit 13)

The percentage of young children, ages 0-5, in Medicaid receiving psychotropic medication doubled from 0.6% in 2005 to 1.2% in 2011. While the number of young children in Medicaid increased by 22%, the number receiving psychotropic medication increased 129%, with nearly 179,000 young children receiving psychotropic medications in 2011. The percentage of children, ages 6-12, who used psychotropic medication increased from 8.6% in 2005, to 9.8% in 2008, to 10.5% in 2011 — a 22% increase between 2005 and 2011. The number of children, ages 6-12, in Medicaid increased by 8.6% between 2005 and 2011, while the number receiving psychotropic medication increased 33%, with over a million receiving psychotropic medications in 2011. The percent of adolescents, ages 13-18, who received psychotropic medication increased from 10.6% in 2005 to 10.9% in 2008 to 12.1% in 2011 — a 14% increase between 2005 and 2011. The number of adolescents in the Medicaid population declined by 2% between 2005 and 2011, but the number receiving psychotropic medication increased 12%, with nearly 850,000 receiving psychotropic medication in 2011. Adolescents consistently have had the highest rate of use of psychotropic medication. However, children, ages 6-12, are the largest cohort receiving psychotropic medications because of their larger numbers in the Medicaid child population and because their rate of use is not far behind that of adolescents (10.5% versus 12.1% in 2011). Children, ages 6-12, constituted over 52% of children receiving psychotropic medications in 2011, up from 50% in 2005; adolescents, ages 13-18, made up 39%, down from 45% in 2005, and young children, ages 0-5, were 8% of the population using psychotropic medications in 2011, up from 4.6% in 2005.

Psychotropic Medication Use by Gender (Exhibit 13)

Males consistently have had a higher rate of use of psychotropic medication than females, though the rate of use among females increased to a greater degree than that of males between 2005 and 2011. The rate of use for boys increased from 7.4% in 2005, to 7.6% in 2008, to 8.3% in 2011 — a 12% increase between 2005 and 2011. The rate of use for girls increased from 4.1% in 2005, to 4.4% in 2008, to 5% in 2011 — a 22% increase. The number of boys in the Medicaid child population increased 12% between 2005 and 2011, while the number of boys using psychotropic medications increased 25%. The number of girls in the Medicaid child population increased 11% between 2005 and 2011, while the number of girls receiving psychotropic medications increased nearly 33%. Primarily because of their higher rate of use, boys made up nearly 64% of the population receiving psychotropic medications.

Psychotropic Medication Use by Race/Ethnicity (Exhibit 13)

The rate of psychotropic medication use for White children, who consistently have had the highest rate of use, went from 9% in 2005, to 9.5% in 2008, to 10.1% in 2011 — a 12% increase between 2005 and 2011. The number of White children in the Medicaid child population increased 6% between 2005 and 2011, while the number receiving psychotropic medication increased nearly 18%. While other racial cohorts of children had lower rates of use, their rates increased to a greater degree than that of Whites between 2005 and 2011, with the one exception of NH/PI children, which was the only racial/ethnic cohort whose rate of use declined between 2005 and 2011.

Rates of psychotropic medication use for BL/AA children increased from 4.6% in 2005, to 5% in 2008, to 5.6% in 2011 — a 22% increase. The number of BL/AA children in the Medicaid child population declined 2% between 2005 and 2011, while the number receiving psychotropic medication increased 18%.

Rates of psychotropic medication use for AI/AN children increased from 4.8% in 2005, to 5.5% in 2008, to 6.4% in 2011 — a 33% increase. The number of AI/AN children in the Medicaid child population declined 13.3% between 2005 and 2011, while the number receiving psychotropic medications increased 15%.

The rate of psychotropic medication use for Asian children, who consistently have had the lowest rate of use among all racial/ethnic cohorts, increased from 1% in 2005, to 1.2% in 2008, to 1.4% in 2011 — a 40% increase. The number of Asian

children in the Medicaid child population increased 20% between 2005 and 2011, while the number receiving psychotropic medications increased 55%.

The rate of psychotropic medication use for Hispanic/Latino children increased from 2.1% in 2005, to 2.5% in 2008, to 2.8% in 2011 — a 33% increase. The number of Hispanic/Latino children in the Medicaid child population increased 13% between 2005 and 2011, while the number receiving psychotropic medications increased 46%.

The rate of psychotropic medication use for NH/PI children, who consistently have had the second lowest rate next to that of Asian children, basically remained the same at 1.7% between 2005 and 2011. The number of NH/PI children in the Medicaid child population declined 12% between 2005 and 2011, and the number receiving psychotropic medication also decreased by roughly the same degree (13%).

The psychotropic medication utilization rate of Hispanic/Latino children of more than one race increased from 2.7% in 2005 to 3.1% in 2208 to 3.7% in 2011 — a 37% increase between 2005 and 2011. The number of Hispanic/Latino children of more than one race in the Medicaid child population increased 104% between 2005 and 2011, while the number receiving psychotropic medications increased 177%.

The psychotropic medication use rate for Multiracial children, who consistently have had the second highest rate of use next to that of White children, increased from 5.4% in 2005, to 6.6% in 2008, to 7.9% in 2011 — a 46% increase between 2005 and 2011. The number of Multiracial children in the Medicaid child population increased by 195% between 2005 and 2011, while the number using psychotropic medications increased 318%.

White children, because of their relatively high numbers in the Medicaid child population and their high rate of psychotropic medication use, have consistently been the largest cohort of the child population using psychotropic medication. However, their representation in the population receiving medication decreased from 60% in 2005, to 56% in 2011, both because their numbers in the Medicaid population declined and because their rate of psychotropic medication use did not increase to the same extent as that of virtually all other racial/ethnic cohorts. BL/AA children represented the second largest cohort receiving psychotropic medications at about 20% of the population, followed by Hispanic/Latino children at about 9%.

The representation of White children among those receiving psychotropic medication (56% in 2011) far exceeds their representation among children in Medicaid at 37%. Multiracial children also are over-represented among those receiving psychotropic medication but not to the same extent; they represented 0.8% of those using psychotropic medications and 0.7% of all children in Medicaid. All other racial/ethnic groups used psychotropic medication at rates that were lower than their representation among children in Medicaid, even with the increase in utilization between 2005 and 2011 for most groups.

Psychotropic Medication Utilization by Aid Category (Exhibit 13)

Children on SSI/disability consistently have had the highest rate of psychotropic medication use, and the rate increased from 26.9% in 2005, to 28.5% in 2008, to 29.5% in 2011 — a 10% increase. The number of children on SSI/disability in the Medicaid child population increased 22% between 2005 and 2011, while the number receiving psychotropic medications increased 34%.

Children in foster care also have had consistently high rates of psychotropic medication use, approaching those of children on SSI. Their rate of use increased between 2005 and 2011 but not to the same extent as that of children on SSI/disability or TANF-enrolled children. Their rate of use increased from 23% in 2005 to 24.4% in 2011 — a 6% increase. The number of children in foster care in the Medicaid child population decreased 8% between 2005 and 2011, while the number receiving psychotropic medications decreased 3%.

Children in the TANF population, who consistently have had significantly lower rates of psychotropic medication use, experienced a 17% increase in the rate of use between 2005 and 2011, going from 4.2% to 4.9%. The number of children enrolled in Medicaid through TANF increased 11.6% between 2005 and 2011, while the number receiving psychotropic medications increased 32%.

Both children on SSI/disability and those in foster care are over-represented in the population using psychotropic medication relative to their representation in the Medicaid child population. Children on SSI/disability were 22% of the population using psychotropic medications, but only 5% of the Medicaid child population in 2011; children in foster care were 9.5% of the population using psychotropic medications but only 2.6% of the Medicaid child population. Children on TANF, due to their large numbers in the Medicaid child population, represented nearly 69% of those receiving medication; however, they are under-represented compared to their 92% representation in the Medicaid child population.

Exhibit 13. Psychotropic Medication Utilization among Children in Medicaid, 2005, 2008, and 2011

Characteristics	2005				2008				2011			
	All Children in Medicaid (29,050,305)		Children Prescribed Psychotropic Medication (1,686,387)		All Children in Medicaid (30,503,614)		Children Prescribed Psychotropic Medication (1,843,734)		All Children in Medicaid (32,384,256)		Children Prescribed Psychotropic Medication (2,157,045)	
	N	%	N	%	N	%	N	%	N	%	N	%
Age												
0-5 years	12,001,451	41.3%	77,812	4.6%	14,128,316	46.3%	163,655	8.9%	14,625,040	45.2%	178,599	8.3%
6-12 years	9,889,507	34.0%	850,535	50.4%	9,559,021	31.3%	936,141	50.8%	10,742,593	33.2%	1,129,289	52.4%
13-18 years	7,159,347	24.6%	758,040	45.0%	6,816,277	22.3%	743,938	40.3%	7,016,623	21.7%	849,157	39.4%
Gender												
Female	14,202,259	48.9%	588,393	34.9%	14,860,326	48.7%	659,931	35.8%	15,764,284	48.7%	780,332	36.2%
Male	14,816,976	51.0%	1,097,859	65.1%	15,549,420	51.0%	1,183,740	64.2%	16,544,410	51.1%	1,376,650	63.8%
Race/Ethnicity												
White	11,271,574	38.8%	1,025,518	60.8%	11,210,800	36.8%	1,060,356	57.5%	11,989,616	37.0%	1,207,315	56.0%
Black or African American	7,537,925	25.9%	348,591	20.7%	7,586,425	24.9%	377,418	20.5%	7,399,372	22.8%	411,255	19.1%
American Indian or Alaska Native	448,234	1.5%	21,636	1.3%	455,040	1.5%	24,943	1.4%	388,749	1.2%	24,794	1.1%
Asian	644,744	2.2%	6,624	0.4%	678,467	2.2%	8,450	0.5%	774,040	2.4%	10,267	0.5%
Hispanic or Latino	6,413,067	22.1%	137,559	8.2%	6,932,396	22.7%	171,665	9.3%	7,255,224	22.4%	200,883	9.3%
Native Hawaiian or Pacific Islander	185,598	0.6%	3,156	0.2%	205,304	0.7%	3,110	0.2%	162,835	0.5%	2,742	0.1%
Hispanic or Latino + one or more races	846,083	2.9%	23,151	1.4%	1,231,961	4.0%	38,720	2.1%	1,723,148	5.3%	62,923	2.9%
More than one Race	74,093	0.3%	3,966	0.2%	109,000	0.4%	7,141	0.4%	218,671	0.7%	16,593	0.8%
Unknown	1,628,987	5.6%	116,186	6.9%	2,094,221	6.9%	151,931	8.2%	2,472,601	7.6%	220,273	10.2%
Aid Category												
TANF	26,812,742	92.3%	1,119,266	66.4%	27,947,758	91.6%	1,170,756	63.5%	29,932,214	92.4%	1,477,243	68.5%
Foster Care	919,590	3.2%	212,176	12.6%	1,005,542	3.3%	230,453	12.5%	844,963	2.6%	205,923	9.5%
SSI/Disabled	1,317,973	4.5%	354,945	21.0%	1,550,314	5.1%	442,525	24.0%	1,607,079	5.0%	473,879	22.0%

Highlights and Implications of the Data

Given national attention to the use of psychotropic medication for children and calls for closer monitoring and psychosocial alternatives[27], the increased rate of psychotropic medication use among all age groups of children and youth in Medicaid is concerning. Over one million children, ages 6-12, in the Medicaid population received psychotropic medications in 2011, and there was a notable increase in the rate of use among young children, 0-5. As discussed earlier, Conduct Disorder was the diagnosis most frequently received by young children in 2011, which could be related to their increased receipt of psychotropic medications that, perhaps, are being prescribed for aggressive behaviors that are masking other issues, such as trauma or learning problems.

Medication use increased for both girls and boys, and to a greater degree for girls between 2005 and 2011. However, boys consistently have had much higher rates of use than girls and are notably over-represented among those using psychotropic medication compared to their representation in the Medicaid child population, constituting 64% of children receiving psychotropic medications in 2011 but only 51% of the Medicaid child population. The literature has suggested several reasons as to why boys receive more psychotropic medications than girls. For example, ADHD often drives prescribing practices, and boys are more likely to be diagnosed with ADHD. Boys tend to display more acting-out behaviors in school than girls, which could lead to more prescribing. Boys also have higher rates of use of most BHS types, including services typically associated with higher use of psychotropic medication, such as residential and group care and partial hospitalization/day treatment. Regardless of the reasons, the fact that boys are at such risk for receiving psychotropic medications should encourage the field to advance alternatives tailored to boys and particularly in the settings, such as school, where their behaviors may be putting them most at risk. On the other hand, it should also be of concern that the rate of psychotropic medication use for girls increased to a greater degree than for boys between 2005 and 2011.

Over 10% of all White children in Medicaid received psychotropic medication in 2011, and White children represented 56% of all children using psychotropic medications in that year, considerably higher than their 37% representation in the Medicaid child population. They also constituted the largest cohort of children (47%) using BHS, which could partly explain their higher use of psychotropic medications.

Nonetheless, the disproportionately high rate of psychotropic medication use among White children is concerning. Multiracial children also were slightly overrepresented among those using psychotropic medications, making up 0.8% of those receiving medication and 0.7% of children in Medicaid. While it is troubling that psychotropic medication use increased for all racial/cohorts of children between 2005 and 2011, except for NH/PI children, where there was no change, no other racial/ethnic cohort had rates of psychotropic medication use comparable to that of White children. Asian, NH/PI, and Hispanic/Latino children had lowest rates of use. While non-White cohorts of children had lower rates of use, it also is true that their rates increased to a greater degree than that of White children between 2005 and 2011. The disproportionately high rate of use of White children may be due to their relatively greater access to BHS than virtually all other racial/ethnic groups. If access to BHS continues to improve for racially/ethnically diverse children, which was the case for most groups between 2005 and 2011, it will be important to track whether their use of psychotropic medication also continues to increase.

There has been considerable attention to the issue of psychotropic medication use in the foster care population[28], and these children continue to have disproportionately high psychotropic medication rates, approaching the rate of use of children on SSI. On the other hand, the percentage of children in foster care using psychotropic medications increased by a smaller percentage than that of other children — only 6% between 2005 and 2011, from 23% of children in foster care receiving psychotropic medications in 2005 to 24.4% in 2011. Because their numbers decreased in the Medicaid child population, the number of children in foster care receiving psychotropic medications also decreased from 2005 to 2011, despite the slight increase in the utilization rate. It may be that the heightened attention to the use of psychotropic medication in the foster care population is influencing utilization, although it will be important to continue to track their medication use, particularly as the numbers of children in foster care have begun to climb again, driven in part by the nation's opioid crisis.[29]

Children on SSI/disability have the highest psychotropic medication utilization rate, and it increased from 26.9% to 29.5% between 2005 and 2011 — a 10% increase. Combined, children in foster care and those on SSI/disability made up 32% of the child population using psychotropic medications in 2011, but only 8% of the overall Medicaid child population.

While children on TANF have consistently had a comparatively low rate of use (4.9% in 2011), they experienced the largest increase — 17% — in the rate of use between 2005 and 2011, and, because of their large numbers in the Medicaid child population, they are the largest cohort receiving psychotropic medications. Efforts to focus psychotropic monitoring and oversight on specific high-use populations, such as the foster care population, may be having an impact. Such monitoring and oversight efforts should be extended across the Medicaid child population. The movement of most children into managed-care arrangements in Medicaid creates opportunity to strengthen oversight for all child populations and integrate systemic approaches, such as psychiatric consultation for primary care providers, monitoring mechanisms, and data-informed quality improvement initiatives.

Psychotropic Medication Use by Medication Type (Exhibit 14)

The most frequently used types of psychotropic medication were ADHD medications, received by nearly 69% of children who used psychotropic medications in 2011, about the same percentage as in 2005 but up from about 67% in 2008. The next most frequently used were antidepressants, received by about 32% of children who received psychotropic medications in 2008 and 2011, down from about 35% in 2005. About a quarter of children received antipsychotics in 2011, down from 26% in 2005 and down from nearly 29% in 2008. Nearly 11% of children received mood stabilizers in 2011, down from about 14% in 2008. (Note that, in 2005, lithium was a stand-alone category and then added to the Mood Stabilizer category in 2008.) Use of anxiety medication remained basically the same, at about 6% of children receiving them between 2005 and 2011. Because children often receive more than one medication at a time or their medication type changes, the percentages in Exhibit 14 do not add to 100%.

Psychotropic Medication Use by Medication Type by Age Group (Exhibit 14)

Among age groups, adolescents were the least likely to use ADHD medication, with about half of adolescents who used psychotropic medications using ADHD medications in 2011, down from 53% in 2005 but up from 48% in 2008. Children, ages 6-12, were the most likely to be prescribed ADHD medications, with nearly 83% of that age group who used psychotropic medications in 2011 receiving ADHD medications, down from 84% in 2005 but up from 82% in 2008. A high percentage (73%) of young children, ages 0-5, who used psychotropic medication received ADHD medications in 2011, a 13% increase from 2005.

Adolescents, ages 13-18 were the most likely age group to receive antidepressants, with about half of adolescents who used psychotropic medications receiving antidepressants in 2011, about the same as in 2005. In all study years, less than a quarter (about 22%) of children, ages 6-12, who used psychotropic medications received antidepressants; about 11% of young children, ages 0-5, received antidepressants in 2011, down from 15% in 2005.

Adolescents, ages 13-18, were more likely than other age groups to receive antipsychotics, with about 30% of adolescents who used psychotropic medications receiving antipsychotics in 2011, about the same as in 2005, but down from 34% in 2008. About 22% of children, ages 6-12, who used psychotropic medications received antipsychotics in 2011, about the same as in 2005, but down from 25% in 2008. About 18% of young children, ages 0-5, who used psychotropic medications received antipsychotics, down from about 22% in 2005 and 2008. Nearly 33,000 young children, ages 0-5, received antipsychotics in 2011, and 87% increase in the number of children from 2005.

Adolescents were more likely to receive mood stabilizers than other age groups. In 2011, about 15% of adolescents who used psychotropic medications received mood stabilizers, up from about 11% in 2005, but down from 19% in 2008. About 8% of children, ages 6-12, who used psychotropic medications in 2011 received mood stabilizers, up from 6% in 2005, but down from 10% in 2008. In all three study years, a higher percentage of young children, ages 0-5, received mood stabilizers than children, 6-12 year. About 9% of young children received mood stabilizers in 2011, up from 6% in 2005, but down from 10% in 2008. (Note, part of the increase in use between 2005 and study years 2008 and 2011 can be explained by the inclusion of lithium in the mood stabilizer category in the later years, which was a stand-alone category in 2005.)

Young children, ages 0-5, were the most likely age group to receive anxiety medication, with close to 10% of 0-5-year olds who used psychotropic medications in 2011 receiving anxiety medication, about the same as in 2008, but down from 16% in 2005. Adolescents, ages 13-18, have the next highest use of anxiety medications, with 9% of adolescents who used psychotropic medications in 2011 receiving anxiety medications, the same as in 2008, but up from 7% in 2005. Only about 3% of children, ages 6-12, who used psychotropic medications received anxiety medication in all three study years.

Exhibit 14. Distribution of Psychotropic Medication Use among Children in Medicaid, by Age Group and Medication Type, 2005, 2008, and 2011

Medication Type*	2005				2008				2011			
	Overall	Ages 0 – 5	Ages 6 – 12	Ages 13 – 18	Overall	Ages 0 – 5	Ages 6 – 12	Ages 13 – 18	Overall	Ages 0 – 5	Ages 6 – 12	Ages 13 – 18
ADHD Medications	1,169,369 (69.3%)	50,133 (64.4%)	714,673 (84.0%)	404,563 (53.4%)	1,232,032 (66.8%)	113,075 (69.1%)	764,129 (81.6%)	354,828 (47.7%)	1,486,834 68.9%	130,294 73.0%	933,622 82.7%	422,918 49.8%
Antidepressants	584,652 (34.7%)	11,711 (15.1%)	189,503 (22.3%)	383,438 (50.6%)	583,389 (31.6%)	19,501 (11.9%)	200,021 (21.4%)	363,867 (48.9%)	687,627 31.9%	19,561 11.0%	242,878 21.5%	425,188 50.1%
Antipsychotics	442,985 (26.3%)	17,633 (22.7%)	191,115 (22.5%)	234,237 (30.9%)	524,884 (28.5%)	36,141 (22.1%)	235,176 (25.1%)	253,567 (34.1%)	534,429 24.8%	32,934 18.4%	244,936 21.7%	256,559 30.2%
Mood Stabilizers	136,732 (8.1%)	4,827 (6.2%)	48,994 (5.8%)	82,911 (10.9%)	252,065 (13.7%)	20,346 (12.4%)	94,154 (10.1%)	137,565 (18.5%)	227,324 10.5%	16,870 9.4%	84,182 7.5%	126,272 14.9%
Anxiety Medications	101,114 (6.0%)	12,481 (16.0%)	33,392 (3.9%)	55,241 (7.3%)	120,991 (6.6%)	16,683 (10.2%)	34,325 (3.7%)	69,983 (9.4%)	135,829 6.3%	17,646 9.9%	38,455 3.4%	79,728 9.4%
Lithium**	30,786 (1.8%)	261 (0.3%)	8,876 (1.0%)	21,649 (2.9%)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Children Receiving Psychotropic medications	**1,686,317**	**77,812**	**850,535**	**758,040**	**1,843,734**	**163,655**	**936,141**	**743,938**	**2,157,045**	**178,599**	**1,129,289**	**849,157**

**Children may receive more than one medication type.*

***Lithium was added to the Mood Stabilizer category in 2008 and 2011.*

Psychotropic Medication Use by Medication Type by Aid Category (Exhibit 15)

High percentages of all aid categories of children received ADHD medication. In 2011, 70% of children in the TANF population and 70% of those in foster care who used psychotropic medications received ADHD medications, up slightly from prior study years. Sixty-four percent of children on SSI/disability who received psychotropic medications used ADHD medication in 2011, down from 67% in 2005, but up from 61% in 2008.

Children in foster care were more likely than other aid categories of children to receive antidepressants, with about 39% of children in foster care who used medication receiving antidepressants in 2011, about the same as in 2008, but down from 44% in 2005. About 30% of children on SSI/disability and TANF-enrolled children who used psychotropic medication in 2011 received antidepressants, about the same as in 2008 but down from 34% and 33%, respectively, in 2005.

Children in foster care were somewhat more likely than children on SSI/disability, and considerably more likely than TANF-enrolled children, to receive antipsychotics. In 2011, 41% of children in foster care who used psychotropic medications received antipsychotics, down from 42% in 2005 and 44% in 2008. Forty percent of children on SSI/disability who used psychotropic medications in 2011 received antipsychotics, down from about 42% in 2008 and 2005. About 18% of TANF-enrolled children who used psychotropic medications received antipsychotics in both 2005 and 2011, which was down from about 20% in 2008.

Children on SSI/disability were more likely than other aid categories of children to receive mood stabilizers, with 20% of children on SSI/disability who used psychotropic medication in 2011 receiving mood stabilizers, down from about 25% in 2008. About 15% of children in foster care who used psychotropic medications in 2011 received mood stabilizers, down from 17% in 2008, but up from 12% in 2005. Children in the TANF population were the least likely to receive mood stabilizers, with about 7% receiving these medications in 2011, a slight increase from 2005, but a decrease from almost 9% in 2008.

The SSI/disability population was more likely than other aid categories of children to receive anxiety medication, with about 9% of children on SSI/disability who used

psychotropic medications receiving anxiety medications in all three study years. TANF-enrolled children were the next most likely group to receive anxiety medication, with about 6% receiving this medication in all three study years. About 4% of children in foster care who used psychotropic medications received anxiety medications in all three study years.

Exhibit 15. Distribution of Psychotropic Medication Use among Children by Aid Category and Drug Type, 2005, 2008, and 2011

Medication Type*	2005				2008				2011			
	Overall	TANF	Foster Care	SSI/ Disabled	Overall	TANF	Foster Care	SSI/ Disabled	Overall	TANF	Foster Care	SSI/ Disabled
ADHD Medications	1,169,369 (69.3%)	788,516 (70.4%)	144,335 (68.0%)	236,518 (66.6%)	1,232,032 (66.8%)	805,920 (68.8%)	158,046 (68.6%)	268,066 (60.6%)	1,486,834 68.9%	1,039,627 70.4%	144,993 70.4%	302,214 63.8%
Antidepressants	584,652 (34.7%)	370,618 (33.1%)	92,196 (43.5%)	121,838 (34.3%)	583,389 (31.6%)	359,075 (30.7%)	89,200 (38.7%)	135,114 (30.5%)	687,627 31.9%	459,099 31.1%	79,455 38.6%	149,073 31.5%
Antipsychotics	442,985 (26.3%)	203,092 (18.1%)	89,423 (42.1%)	150,470 (42.4%)	524,884 (28.5%)	233,520 (19.9%)	102,052 (44.3%)	189,312 (42.8%)	534,429 24.8%	259,551 17.6%	84,466 41.0%	190,412 40.2%
Mood Stabilizers	136,732 (8.1%)	65,506 (5.9%)	25,743 (12.1%)	45,483 (12.8%)	252,065 (13.7%)	109,933 (8.8%)	103,329 (16.8%)	38,803 (24.8%)	227,324 10.5%	101,922 6.9%	29,885 14.5%	95,517 20.2%
Anxiety Medications	101,114 (6.0%)	62,068 (5.5%)	7,521 (3.5%)	31,525 (8.9%)	120,991 (6.6%)	40,671 (6.1%)	71,482 (3.8%)	8,838 (9.2%)	135,829 6.3%	86,409 5.8%	7,881 3.8%	41,539 8.8%
Lithium**	30,786 (1.8%)	12,074 (1.1%)	7,321 (3.5%)	11,391 (3.2%)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Receiving Psych. Meds.	**1,686,317**	**1,119,266**	**212,176**	**354,945**	**1,843,734**	**1,170,756**	**230,453**	**442,525**	**2,157,045**	**1,477,243**	**205,923**	**473,879**

**Children may receive more than one medication type.*

***Lithium was added to the Mood Stabilizer category in 2008 and 201.*

Highlights and Implications of the Data

Despite attention to concerns about over-prescribing of ADHD medication[30], the rate of use of ADHD medications among children in Medicaid increased between 2008 and 2011, with 69% of children who used psychotropic medication in 2011 receiving ADHD medication. Because the Medicaid child population grew, as did the number of children using psychotropic medications, the actual number of children receiving ADHD medication increased 27% between 2008 and 2011, with nearly 1.5m children on ADHD medication. In contrast, the rate of use of all other psychotropic medication types either stayed the same or decreased between 2008 and 2011, although, again, because of the increase in the size of the Medicaid child population, more children received every type of psychotropic medication in 2011, except for mood stabilizers, which were received by fewer children in 2011 than in 2008.

Children, ages 6-12, were more likely than adolescents, ages 13-18, to receive ADHD medication, and young children, ages 0-5, experienced the largest increase in ADHD medication use between 2005 and 2011. Adolescents were more likely to receive every other category of psychotropic medication — antidepressants, antipsychotics, and mood stabilizers — except for anxiety medication, which, in all three study years, was more likely to be prescribed to young children, ages 0-5, than to other age groups. As noted earlier, there has been national attention to the use of antipsychotics in children; the study found that antipsychotic use went down for all age groups between 2008 and 2011, though it largely remained the same between 2005 and 2011 for children, ages 6-12, and adolescents, ages 13-18. Reduction in use of antipsychotics was greatest in young children, ages 0-5, — a group to whom states have paid particular attention to heightened oversight and monitoring. That said, over 18% of young children, ages 0-5, who used psychotropic medication in 2011 received antipsychotics, nearly 33,000 children.

High percentages of all aid categories of children who used psychotropic medications received ADHD medications throughout the study period — 70% of TANF-enrolled children who used psychotropic medications, 70% of children in foster care, and 64% of children on SSI. Children in foster care were more likely than all other aid categories of children to receive antidepressants (39% of children in

foster care who used psychotropic medications received antidepressants in 2011, versus about 31% of children on SSI/disability and in the TANF population). Children in foster care were considerably more likely than TANF-enrolled children to receive antipsychotics (41% of children in foster care who used psychotropic medications received antipsychotics, versus 18% of TANF-enrolled children) and slightly more likely than children on SSI/disability to receive antipsychotics (41% versus 40% in 2011).

Considerable attention has been paid to the use of psychotropic medication — antipsychotics, in particular — among children in foster care, with the federal Children's Bureau providing specific guidance to states in 2012.[31] The *Children's Faces of Medicaid* data show a 7% decrease in use of antipsychotics by the foster care population between 2008 and 2011, and a smaller 3% decrease between 2005 and 2011. In 2011, over 84,000 children in foster care received antipsychotics, about 21% of the total foster care population in that year. In 2005, over 89,000 children in foster care received antipsychotics, but because there were more children in foster care in that year, those receiving antipsychotics represented 17% of the total population. In other words, the rate of antipsychotic use was higher in 2011 than in 2005. The rate was lower in 2011 than in 2008, however, when 22% of children in foster care received antipsychotics. In response to national attention to the issue, states are increasing their attention to the use of psychotropic medication among children in foster care. It will be important to continue tracking whether and how state initiatives affect psychotropic medication utilization patterns for this population.

Use of Concurrent Psychotropic Medications among Children in Medicaid

What the Data Show

Overall Concurrent Medication Use (Exhibit 16)

Concurrent psychotropic medication use, also known as co-prescription, refers to the simultaneous dispensing of different categories of psychotropic medications (i.e., an antipsychotic and an ADHD/stimulant medication), or the simultaneous dispensing of two medications within the same class (i.e., two different antipsychotic medications). Between 2005 and 2011, there was a slight decrease (3%) in the percentage of children receiving two or more concurrent psychotropic medications and a corresponding increase in the percentage using only one medication type. In 2011, 69% of children who used psychotropic medication received only one medication type, up from 67% in 2005 and 66% in 2008. In 2011, 21.5% of children receiving medication were on two concurrent medication types, down from 22.3% in 2005 and 22.9% in 2008. In 2011, 7.7% of children receiving medication were on three concurrent psychotropic medications, down from 8.5% in 2005 and 8.8% in 2008. In 2011, 1.8% of children receiving psychotropic medications were on four or more concurrent psychotropic medications, down from 2.2% in 2005 and 2.1% in 2008.

Concurrent Medication Use by Age Group (Exhibit 16)

Young children, ages 0-5, were the least likely age group to receive concurrent psychotropic medications, with 82% receiving only one type in 2011, up from 80% in 2005 and 79% in 2008. The percentage of young children, ages 0-5, receiving two concurrent psychotropic medications decreased from 15.6% in 2005 to 14.5% in 2011, after having increased in 2008 to 16.5%. The percentage of this age group receiving three concurrent psychotropic medications decreased from 3.6% in 2005, and 3.8% in 2008, to 3% in 2011; and the percentage receiving four or more concurrent psychotropic medications decreased from 0.6% in 2005, to 0.5% in 2008, to 0.4% in 2011.

Nearly 73% of children, ages 6-12, received only one medication type in 2011, up from 71% in 2005 and 69% in 2008. The percentage of children, ages 6-12, receiving two concurrent psychotropic medications decreased from 20% in 2005, and 21.2% in 2008, to 19.6% in 2011. The percentage receiving three concurrent psychotropic medications decreased from 7.1% in 2005, and 7.7% in 2008, to 6.5% in 2011. The percentage of children, ages 6-12, receiving four or more concurrent psychotropic medications decreased from 1.7% in 2005 and 2008 to 1.3% in 2011.

Adolescents, ages 13-18, were the most likely age group to receive concurrent medication, with 66.1% receiving only one medication type in 2011, up from 60.9% in 2005 and 59.1% in 2008. In 2011, 25.4% of adolescents received two concurrent psychotropic medications, about the same as in 2005, but down from 26.5% in 2008. In 2011, 10.4% of adolescents received three concurrent psychotropic medications, about the same as in 2005, but down from 11.4% in 2008. In 2011, 2.7% of adolescents received four or more concurrent psychotropic medications, down from 3% in 2005 and 2008.

Exhibit 16. Concurrent Psychotropic Medications Use among Children in Medicaid, by Age Group and Overall, 2005, 2008, and 2011

Number of Medications	Ages 0-5			Ages 6-12			Ages 13-18			Overall		
	2005	2008	2011	2005	2008	2011	2005	2008	2011	2005	2008	2011
One	80.1% (62,365)	79.2% (129,577)	82.1% (146,708)	71.2% (605,722)	69.4% (649,540)	72.6% (819,361)	60.9% (461,829)	59.1% (439,615)	61.6% (522,668)	67.0% (1,129,916)	66.1% (1,218,732)	69.0 (1,488,737)
Two	15.6% (12,157)	16.5% (26,992)	14.5% (25,840)	20.0% (169,763)	21.2% (198,617)	19.6% (221,087)	25.6% (194,076)	26.5% (197,117)	25.4% (215,878)	22.3% (375,996)	22.9% (422,726)	21.5% (462,805)
Three	3.6% (2,839)	3.8% (6,194)	3.0% (5,321)	7.1% (60,563)	7.7% (71,839)	6.5% (73,688)	10.5% (79,400)	11.4% (84,528)	10.4% (87,929)	8.5% (142,802)	8.8% (162,561)	7.7% (166,938)
Four or more	0.6% (451)	0.5% (892)	96.6% (172,548)	1.7% (14,487)	1.7% (16,145)	92.1% (1,040,448)	3.0% (22,735)	3.0% (22,678)	2.7% (22,682)	2.2% (33,283)	2.1% (39,715)	1.8% (38,565)
Total Receiving Psych. Meds.	**77,812**	**163,655**	**178,599**	**850,535**	**936,141**	**1,129,289**	**758,040**	**743,938**	**849,157**	**1,686,387**	**1,843,784**	**2,157,045**

Concurrent Medication Use by Aid Category (Exhibit 17)

Children in foster care were the most likely aid category of children to be on concurrent psychotropic medications. In 2011, 53.2% of children in foster care received only one medication, compared to 75.6% of TANF-enrolled children and 55.2% of children on SSI. In 2011, 29% of children in foster care were on two concurrent psychotropic medications, down from 29.6% in 2005 and 30% in 2008. In 2011, 14.2% of children in foster care were on three concurrent psychotropic medications, down from 14.7% in 2005 and 14.9% in 2008. In 2011, 3.6% of children in foster care were on four or more concurrent psychotropic medications, down from 4.4% in 2005 and 4.1% in 2008. Children in foster care were more likely than other aid categories to be on two, three, four, or more concurrent psychotropic medications.

Children on SSI/disability also had high percentages, relative to the TANF-enrolled population, of concurrent medication use. In 2011, 28.8% of children on SSI/disability were on two concurrent psychotropic medications, down from 29% in 2005 and 29.5% in 2008. In 2011, 12.6% of children on SSI/disability were receiving three concurrent psychotropic medications, down from 13.4% in 2005 and 13.6% in 2008. In 2011, 3.4% of children on SSI/disability received four or more concurrent psychotropic medications, down from 4% in 2005 and 3.7% in 2008.

Children in the TANF population were the least likely aid category to be on concurrent psychotropic medications. In 2011, 75.6% of TANF-enrolled children received only one medication, up from 74.2% in 2005 and 73.9% in 2008. In 2011, 18% of these children received two concurrent psychotropic medications, down from 18.8% in 2005 and 19% in 2008. In 2011, 5.3% of TANF-enrolled children received three concurrent psychotropic medications, down from 5.7% in 2005 and 5.8% in 2008. In 2011, 1% of children in the TANF population received four or more concurrent psychotropic medications, down from 1.3% in 2005 and 1.2% in 2008.

While much higher percentages of children in foster care and on SSI/disability received concurrent psychotropic medications compared to TANF-enrolled children, because there are so many more TANF-enrolled children in the Medicaid child population, the actual number of TANF-enrolled children receiving concurrent psychotropic medications is higher than either the foster care or SSI/disability populations. For example, in 2011, 36,591 children in foster care received three or more concurrent psychotropic medications, compared to 75,600 children on SSI/disability, and 93,512 children enrolled through TANF.

Exhibit 17. Number of Concurrent Psychotropic Medication Types among Children in Medicaid, by Aid Category, 2005, 2008, and 2011

Number of Drug Categories Prescribed in the Same Episode of Care	TANF			Foster Care			SSI/Disabled		
	2005	2008	2011	2005	2008	2011	2005	2008	2011
One Medication Type	74.2% (830,752)	73.9% (865,291)	75.6% 1,117,328	51.3% (108,883)	51% (117,630)	53.2% 109,633	53.6% (190,281)	53.3% (235,811)	55.2% 261,776
Two Medication Types	18.8% (210,210)	19.1% (223,108)	18.0% 266,603	29.6% (62,790)	30% (69,056)	29.0% 59,699	29.0% (102,996)	29.5% (130,562)	28.8% 136,503
Three Medication Types	5.7% (64,043)	5.8% (68,453)	5.3% 78,123	14.7% (31,146)	14.9% (34,401)	14.2% 29,168	13.4% (47,613)	13.5% (58,707)	12.6% 59,647
Four or more Medication Types	1.3% (14,261)	1.2% (13,904)	1.0% 15,189	4.4% (9,357)	4.1% (9,366)	3.6% 7,423	4.0% (14,055)	3.7% (16,445)	3.4% 15,953
Total Children Receiving Psychotropic Medications (100%)	**1,119,266**	**1,170,756**	**1,477,243**	**212,176**	**230,453**	**205,923**	**354,945**	**442,525**	**473,879**

Highlights and implications of the Data

Although the decrease between 2005 and 2011 in use of concurrent psychotropic medications was slight — 3% — it nonetheless reflected some attention to concerns raised nationally about concurrent medication use in children. With that said, over 30% of children in Medicaid receiving psychotropic medication received two or more concurrent medication types in 2011, with 10% (over 200,000 children) receiving three or more. Reflecting heightened attention to concurrent medication use in young children, ages 0-5, this age group was the least likely to receive concurrent psychotropic medications. However, 18% of young children, ages 0-5, received two or more concurrent psychotropic medications in 2011, with over 6,000 young children receiving three or more. Over a quarter (27%) of children, ages 6-12, received concurrent psychotropic medications in 2011, with 8% (nearly 89,000) children receiving three or more. Adolescents, ages 13-18, were the most likely age group to use concurrent psychotropic medications: 38% of adolescents who used psychotropic medication in 2011 received concurrent psychotropic medications. Thirteen percent of adolescents received three or more concurrent psychotropic medications — over 100,000 youth — in 2011.

Both children in foster care and those on SSI/disability consistently have had disproportionately high use of concurrent psychotropic medication throughout the study years, with children in foster care being the most likely age group to receive concurrent psychotropic medications. Nearly 47% of children in foster care using psychotropic medication in 2011 received concurrent psychotropic medications, compared to 45% of children on SSI/disability and 24% of TANF-enrolled children. However, because of their large numbers in the Medicaid child population, TANF-enrolled children are the largest group receiving concurrent psychotropic medications, with nearly 360,000 TANF-enrolled children on concurrent psychotropic medications in 2011, compared to about 212,000 children on SSI/disability and 96,000 children in foster care. On the other hand, children in foster care and those on SSI/disability represent about 8% of all children in Medicaid; yet the numbers of these children on concurrent psychotropic medications approaches that of TANF-enrolled children, who represent 92% of all Medicaid children.

There has been understandable attention paid to the use of concurrent psychotropic medications in the foster care population, and continued oversight and monitoring are needed. States must also consider the disproportionately high rate of concurrent medication use among children on SSI/disability, as well as the large numbers of TANF-enrolled children receiving concurrent psychotropic medications. Systemic approaches that focus on all Medicaid child populations are needed.

Psychotropic Medication Use among Children with Behavioral Health Services and Children with No Behavioral Health Services

What the Data Show

Use of Psychotropic Medications among Children with and without Accompanying BHS (Exhibit 18)

In 2011, 46% of children who received psychotropic medication received no accompanying BHS, a decrease from 49% in 2005 and 51% in 2008. Young children, ages 0-5, were more likely than other age groups to receive psychotropic medications without accompanying behavioral health treatment, with 49% in that group in 2011 receiving no BHS while receiving psychotropic medications, though down significantly from 58% in 2005 and 57% in 2005. Forty-seven percent of children, ages 6-12, who received psychotropic medication in 2011 received no BHS, down from 52% in 2005 and 53% in 2008. Adolescents were more likely than other age groups to receive psychotropic medications with BHS, with 42% receiving no accompanying BHS in 2011, down from 45% in 2005 and 47% in 2008. Boys who used psychotropic medication were slightly more likely than girls to receive behavioral health services as well, with 45% of boys and 46% of girls receiving no accompanying BHS in 2011, both down slightly from 2005 and 2008.

In 2011, Asian and NH/PI children were more likely than other racial/ethnic cohorts to receive psychotropic medications with no accompanying BHS, with 51% of these children receiving only psychotropic medication. This was an improvement over 2008, when 63% of Asian children and 69% of NH/PI children who received psychotropic medications received no BHS. White and Hispanic/Latino children also were more likely than children in general who received psychotropic medications to receive no accompanying BHS, with 48% of White children and 47% of Hispanic/Latino children receiving no BHS. This was an improvement over 2008 when 53% of White children and 56% of Hispanic/Latino children received no accompanying BHS. In 2011, Hispanic/Latino children of more than one race, Multiracial children, BL/AA children, and AI/AN children who received psychotropic medications were more likely than other racial/ethnic cohorts to receive BHS as well. Sixty-five percent of Hispanic/Latino children of more than one race, 64% of Multiracial children, 60% of BL/AA children, and 57% of AI/AN children received accompanying BHS in 2011, all of which were increases over 2008.

TANF-enrolled children were far more likely than other aid categories to receive psychotropic medication with no accompanying BHS, with 49% of these children receiving only psychotropic medications in 2011, compared to 39% of children on SSI/disability and 29% of children in foster care. All aid categories of children receiving psychotropic medications, however, did increase their access to BHS over the study period. In 2008, 56% of TANF-enrolled children, 46% of children on SSI/disability, and 37% of children in foster care received only psychotropic medication.

Exhibit 18. Characteristics and BHS Use Patterns for Children Prescribed Psychotropic Medications without Accompanying BHS Use, 2005, 2008, and 2011

Demographic and Aid Categories	2005		2008		2011	
	Medicaid Children Receiving Psychotropic Medication		Medicaid Children Receiving Psychotropic Medication		Medicaid Children Receiving Psychotropic Medication	
Age Group						
0-5 years	(32,358) 42%	(45,454) 58%	(69,820) 43%	(93,835) 57%	(91,633) 51%	86,966 49%
6-12 years	(409,128) 48%	(441,407) 52%	(437,645) 47%	(498,496) 53%	598,033 53%	531,256 47%
13-18 years	(415,890) 55%	(342,150) 45%	(392,755) 53%	(351,182) 47%	492,192 58%	356,965 42%
Gender						
Female	(294,071) 50%	(294,322) 50%	(316,351) 48%	(343,580) 52%	423,885 54%	356,447 46%
Male	(563,237) 51%	(534,622) 49%	(583,856) 49%	(599,884) 51%	757,952 55%	618,698 45%
Race/Ethnicity						
White	(498,279) 49%	(527,239) 51%	(500,148) 47%	(560,208) 53%	631,420 52%	575,895 48%
Black or African American	(189,739) 54%	(158,852) 46%	(206,374) 55%	(171,044) 45%	246,738 60%	164,517 40%
American Indian or Alaska Native	(11,163) 52%	(10,473) 48%	(13,369) 54%	(11,574) 46%	14,073 57%	10,721 43%
Asian	(3,033) 46%	(3,591) 54%	(3,126) 37%	(5,324) 63%	5,039 49%	5,228 51%
Hispanic or Latino	(75,372) 55%	(62,187) 45%	(75,519) 44%	(96,146) 56%	106,212 53%	94,671 47%
Native Hawaiian or Pacific Islander	(1,632) 52%	(1,524) 48%	(950) 31%	(2,160) 69%	1,353 49%	1,389 51%
Hispanic or Latino + one or more races	(14,627) 63%	(8,524) 37%	(23,097) 60%	(15,623) 40%	40,945 65%	21,978 35%
More than one Race	(2,277) 57%	(1,689) 43%	(4,387) 61%	(2,754) 39%	10,614 64%	5,979 36%
Unknown	(61,254) 63%	(36,209) 37%	(73,250) 48%	(78,681) 52%	125,464 57%	94,809 43%
Aid Category						
TANF	(499,595) 45%	(619,671) 55%	(517,557) 44%	(653,199) 56%	748,631 51%	728,612 49%
Foster Care	(144,745) 68%	(67,431) 32%	(144,732) 63%	(85,721) 37%	145,233 71%	60,690 29%
SSI/Disabled	(213,036) 60%	(141,909) 30%	(237,931) 54%	(204,594) 46%	287,994 61%	185,885 39%
Total N	**(857,376) 50.8%**	**(829,011) 49.2%**	**(900,220) 48.8%**	**(943,874) 51.2%**	**(1,181,858) 55%**	**(975,187) 45%**

Concurrent Medication Use among Children with No Accompanying BHS (Exhibit 19)

As Exhibit 19 shows, most children who received psychotropic medication without BHS did not receive concurrent psychotropic medications. In 2011, nearly 85% of children who received medication without BHS used only one psychotropic medication type. This was an increase over both 2005, when nearly 81% of these children received only one, and 2008, when 79% received only one. In 2011, nearly 13% of children using psychotropic medications without BHS received two concurrent psychotropic medications, lower than in both 2005 (15%) and 2008 (16%). In 2011, nearly 3% of children receiving psychotropic medications without BHS received three concurrent psychotropic medications, lower than about 4% in 2005 and 2008. In 2011, 0.4% of children receiving psychotropic medications without BHS received four or more, lower than nearly 1% in 2005 and 2008. While the percentage of concurrent medication use among children receiving psychotropic medications without BHS decreased in 2011, nonetheless, nearly 16% of these children (almost 159,000 children) received two or more concurrent psychotropic medications without receiving accompanying BHS.

Exhibit 19. Use of Concurrent Psychotropic Medications among Children without Accompanying BHS, 2005, 2008, and 2011

Number of Drug Types Concurrently Prescribed	Number and Percent of Children in 2005	Number and Percent of Children in 2008	Number and Percent of Children in 2011
1	394,794 (80.5%)	422,647 (78.8%)	863,635 (84.5%)
2	71,516 (14.6%)	86,439 (16.1%)	127,343 (12.5%)
3	19,783 (4%)	23,215 (4.3%)	26,920 (2.6%)
4 or more	4,267 (0.9%)	4,292 (0.8%)	4,425 (0.4%)
Total Children	**490,360**	**536,593**	**1,022,323**

Highlights and Implications of the Data

Though lower than in 2005 and 2008, there was still a high percentage of children in 2011 — 46% — who received psychotropic medication without accompanying BHS. While most (about 85%) received only one psychotropic medication type, close to 16%, nearly 159,000 children, received two or more concurrent psychotropic medications without receiving BHS. Young children, ages 0-5, girls, Asian and NH/PI children were more likely than other children to receive psychotropic medications without BHS, as were TANF-enrolled children, compared to children on SSI/disability or those in foster care, who were more likely to receive accompanying BHS.

Some psychotropic medication use without accompanying BHS is no doubt due to children, particularly those with ADHD, receiving care through their primary care providers (PCPs). Some of these children may not have a need for a behavioral health referral, or they may have a need and the PCP lacks the time or knowledge to refer, or behavioral health specialty providers are unavailable. It will be important to continue to track this issue to determine if behavioral health treatment use increases for children receiving psychotropic medications as states increasingly implement integrated-care approaches, particularly through Medicaid managed-care arrangements.

Expenditures for Psychotropic Medication Use

What the Data Show

Total Psychotropic Medication Expenditures

Exhibit 20 shows total psychotropic medication expenditures for all children receiving psychotropic medications and is broken down by aid category. Total expenditures increased 69% between 2005 and 2011, while the percent of children in Medicaid using psychotropic medications increased 16% during the same period. In 2011, $2.7 billion was spent on psychotropic medication, up from $1.6 billion in 2005 and $2.2 billion in 2008.

In 2011, the TANF population accounted for the largest share of psychotropic medication expenditures at 53%, or $1.4 billion, for about 69% of children receiving medications. Psychotropic medication expenditures for TANF-enrolled children increased 96% between 2005 and 2011, while the percent of TANF-enrolled children using psychotropic medications increased 17%. Children on SSI/disability accounted for the second largest share of psychotropic medication expenditures in 2011 at about 32%, or $858.9 million, for 22% of children receiving psychotropic medications. Psychotropic medication expenditures increased 57% for the SSI/disability population between 2005 and 2011, while the percent of children on SSI/disability using psychotropic medications increased 10%. Children in foster care represented 15.6% of total psychotropic medication expenditures in 2011 and 9.5% of children using psychotropic medications. Psychotropic medication expense for the foster care population increased 25% between 2005 and 2011, while the percent of children in foster care using psychotropic medications increased 6%. Together, children on SSI/disability and children in foster care represented less than 8% of the Medicaid child population in 2011, while they accounted for nearly 32% of all psychotropic medication users and 47% of all psychotropic medication expense. The TANF population, in contrast, was 92% of the Medicaid child population in 2011 and accounted for less than 69% of children using psychotropic medications and less than 53% of total psychotropic medication expense.

Exhibit 20. Total Expenditures for Psychotropic Medications for Children in Medicaid, by Aid Category, 2005, 2008, and 2011

Aid Category	2005				2008				2011			
	% of Total Medicaid Child Pop.	% of Pop. Using Psych. Meds.	Amount Spent	% of Total Psych. Meds. Expend.	% of Total Medicaid Child Pop.	% of Pop. Using Psych. Meds.	Amount Spent	% of Total Psych. Meds. Expend.	% of Total Medicaid Child Pop.	% of Pop. Using Psych. Meds.	Amount Spent	% of Total Psych. Meds. Expend.
TANF	92.3%	66.4%	$713M	44.6%	91.6%	63.5%	$887.4M	40.3%	92.4%	68.5%	$1.4B	52.9%
Foster Care	3.2%	12.6%	$342.2M	21.4%	3.3%	12.5%	$469.9M	21.3%	2.6%	9.5%	$426.6M	15.6%
SSI/Disabled	4.5%	21.0%	$547.2M	34.2%	5.1%	24.0%	$845.4M	34.4%	5.0%	22.0%	$858.9M	31.5%
Total Medicaid Children Using Psych. Meds.	**5.8%**	**100%**	**$1.6B**	**100%**	**6.0%**	**100%**	**$2.2B**	**100%**	**6.7%**	**100%**	**$2.7B**	**100%**

Total Psychotropic Medication Expenditures by Medication Type and Diagnosis (Exhibit 21)

In 2011, ADHD medications consumed the largest share of total psychotropic medication expense at 56%, or $1.5 billion. This was not the case in either 2005 or 2008, when more was spent in total on antipsychotics than on ADHD medications. Total expense for ADHD medications increased 119% between 2005 and 2011. Total expense for antipsychotics, which were the second most expensive medication type in 2011 at $1 billion, increased 60% between 2005 and 2011. In contrast to ADHD medications and antipsychotics, total expense decreased for all other medication types between 2005 and 2011, with a 50% decrease in mood stabilizer expenditures, a 39% decrease in expenditures on antidepressants, and a 13% decrease in anxiety medication expense.

In all three study years, the top three most expensive cohorts of children using psychotropic medications were: children with ADHD receiving ADHD medications ($1.2 billion in 2011), children with Mood Disorder receiving antipsychotics ($625.8 million in 2011), and children with ADHD receiving antipsychotics ($559.5 million). Children with diagnoses of Conduct Disorder receiving antipsychotics or receiving ADHD medications were the next highest. Expenditures for children with any other diagnosis or medication type were half or less than half of what was spent on these other children.

Exhibit 21. Total Expenditures for Psychotropic Medications for Children in Medicaid, by Psychiatric Diagnoses, 2005, 2008, and 2011

Medication Type	Overall	ADHD	Conduct Disorder	Mood	Anxiety	PTSD	Devel. Disability	Psychosis	Other Diagnosis	No diagnosis
2005										
ADHD Medications	$664,624,770	$311,658,357	$61,213,726	$77,344,900	$47,751,161	N/A	$17,204,517	$9,412,724	$2,391,490	$25,858,505
Antidepressants	$144,229,753	$45,334,646	$19,138,913	$45,423,228	$30,249,988	N/A	$6,283,006	$6,207,425	$1,292,057	$11,770,673
Antipsychotics	$671,728,792	$285,047,522	$143,965,560	$253,634,092	$106,002,239	N/A	$62,236,406	$68,518,457	$6,252,041	$38,670,755
Mood Stabilizers	$112,971,193	$34,808,726	$19,181,211	$38,065,122	$12,873,287	N/A	$7,945,193	$6,962,950	$713,887	$8,048,276
Anxiety Medications	$4,964,864	$641,370	$324,937	$630,280	$529,497	N/A	$287,694	$167,255	$25,711	$381,667
Lithium*	$4,273,958	$1,592,347	$893,733	$2,702,399	$707,138	N/A	$258,351	$462,028	$37,110	$166,344
Total Expense	**$1,602,793,330**	**$679,082,968**	**$244,718,080**	**$417,800,021**	**$198,113,310**	**N/A**	**$94,215,167**	**$91,730,839**	**$10,712,296**	**$84,896,220**
2008										
ADHD Medications	$861,503,424	$674,015,808	$193,882,032	$173,541,072	$78,360,296	$30,888,516	$39,592,176	$14,556,771	$30,314,048	$114,275,576
Antidepressants	$90,314,032	$34,734,580	$24,400,728	$47,671,348	$23,216,706	$8,855,198	$6,885,180	$5,354,980	$5,479,058	$13,739,761
Antipsychotics	$1,018,931,520	$503,651,456	$380,491,872	$520,519,552	$165,118,944	$99,748,040	$149,169,904	$115,389,952	$84,840,008	$110,333,120
Mood Stabilizers	$227,060,128	$64,986,088	$50,559,792	$77,816,464	$24,580,608	$12,415,786	$24,945,260	$13,306,148	$12,089,434	$92,188,184
Anxiety Medications	$4,923,307	$763,420	$591,591	$1,002,771	$829,190	$175,250	$531,169	$205,279	$201,550	$2,655,074
Total Expense	**$2,202,732,411**	**$1,278,151,352**	**$649,926,015**	**$820,551,207**	**$292,105,744**	**$152,082,790**	**$221,123,689**	**$148,813,130**	**$132,924,098**	**$333,191,715**
2011										
ADHD Medications	$1,459,806,918	$1,189,110,061	$324,571,807	$283,417,081	$151,355,602	$51,017,302	$77,329,765	$24,313,651	$49,466,368	$161,450,797
Antidepressants	$87,907,376	$35,957,957	$23,690,790	$49,224,179	$28,055,375	$9,324,520	$7,713,324	$5,716,490	$5,565,898	$10,557,858
Antipsychotics	$1,074,571,249	$559,511,969	$421,092,585	$625,830,171	$217,982,568	$123,382,216	$175,628,480	$135,994,055	$101,083,250	$81,048,946
Mood Stabilizers	$99,911,978	$28,388,493	$20,209,872	$30,029,770	$11,404,774	$4,775,362	$14,761,982	$5,633,508	$4,992,929	$42,130,523
Anxiety Medications	$4,322,524	$788,399	$525,909	$1,026,736	$966,710	$183,299	$447,665	$191,263	$173,407	$2,183,726
Total Expense	**$2,726,520,045**	**$1,813,756,879**	**$790,090,963**	**$989,527,937**	**$409,765,029**	**$188,682,699**	**$275,881,216**	**$171,848,967**	**$161,281,852**	**$297,371,850**

**Lithium was added to the Mood Stabilizer category in 2008 and 2011*

Total Psychotropic Medication Expenditures by Medication Type and Age Group (Exhibit 22)

In 2005, adolescents, ages 13-18, claimed the largest share of psychotropic medication expense at 50%. This was not the case in either 2008 or 2011, as children, ages 6-12, steadily increased their share of psychotropic medication expense to 50% in 2008 and 53% in 2011, with expenditures on adolescents decreasing to 45% in 2008 and 42% in 2011. Psychotropic medication expenditures on young children, ages 0-5, also increased between 2005 and 2011, from 2% of total expense in 2005 to 5% in 2011. Psychotropic medication expenditures for young children, ages 0-5, increased 243% between 2005 and 2011, from $37.4 million to $128.4 million. Psychotropic medication expenditures for children, ages 6-12, increased 90% between 2005 and 2011, from $764 million to $1.5 billion, and expenditures for adolescents, ages 13-18, increased 42%, from $801.3 million to $1.1 billion.

In all three study years, the largest single psychotropic medication expenditure item was ADHD medications for children, ages 6-12 (at $942.6 million in 2011). The next largest was antipsychotic medications for adolescents, 13-18 (at $597.6 million in 2011), followed by antipsychotics for children, 6-12 (at $447.7 million in 2011). Compared to other medication types, there were notably large expenditure increases between 2005 and 2011 for ADHD medications and for antipsychotics for every age group. Expenditures on ADHD medications increased 441% between 2005 and 2011 for young children, ages 0-5, 131% for children, ages 6-12, and 78% for adolescents, ages 13-18. Expenditures on antipsychotics increased 92% for young children, ages 0-5, 63% for children, ages 6-12, and 57% for adolescents. In contrast, expenditures on antidepressants went down for children, ages 6-12, and for adolescents between 2005 and 2011, though they increased slightly (5%) for young children, 0-5. Similarly, expenditures on anxiety medications went down for children, ages 6-12, and for adolescents between 2005 and 2011, while increasing 42% for young children, ages 0-5. Expenditures on mood stabilizers also decreased for children, ages 6-12, and for adolescents between 2005 and 2011, but increased 85% for young children, ages 0-5.

Exhibit 22. Total Expenditures for Psychotropic Medications for Children in Medicaid, by Age Group, 2005, 2008, and 2011

Medication Type	2005				2008				2011			
	Overall	Ages 0 – 5	Ages 6 – 12	Ages 13 – 18	Overall	Ages 0 – 5	Ages 6 – 12	Ages 13 – 18	Overall	Ages 0 – 5	Ages 6 – 12	Ages 13 – 18
ADHD Medications	$664,624,768	$16,639,346	$407,844,064	$240,141,344	$861,503,424	$53,945,548	$545,660,032	$261,897,888	$1,459,806,918	$90,036,519	$942,567,670	$427,202,729
Anti-depressants	$144,229,760	$1,197,663	$38,889,048	$104,143,040	$90,314,032	$1,292,592	$24,689,828	$64,331,608	$87,907,376	$1,256,932	$26,129,874	$60,520,570
Anti-psychotics	$671,728,768	$15,282,090	$274,655,136	$381,791,552	$1,018,931,520	$42,474,808	$440,975,616	$535,481,120	$1,074,571,249	$29,267,840	$447,681,022	$597,622,387
Mood Stabilizers	$112,971,192	$3,886,874	$39,916,812	$69,167,504	$227,060,128	$15,598,724	$85,000,640	$126,460,768	$99,911,978	$7,206,028	$39,262,507	$53,443,443
Anxiety Medications	$4,964,864	$430,668	$1,650,244	$2,883,952	$4,923,307	$613,472	$1,527,190	$2,782,645	$4,322,524	$611,709	$1,321,333	$2,389,482
Lithium*	$4,273,958	$12,973	$1,042,402	$3,218,583	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Expense	**$1.60B**	**$37,449,614**	**$763,997,706**	**$801,345,975**	**$2.20B**	**$113,925,144**	**$1.10B**	**$990,954,029**	**$2.73B**	**$128,379,028**	**$1.46B**	**$1.14B**

**Lithium was added to the Mood Stabilizer category in 2008 and 2011*

Total Psychotropic Medication Expenditures by Medication Type and Aid Category (Exhibit 23)

As noted earlier, because of their large numbers in the Medicaid child population, TANF-enrolled children accounted for the largest share of psychotropic medication expense in all three study years. However, their share of psychotropic medication expense is disproportionately lower than their representation among children using psychotropic medication. In 2011, they represented 69% of children receiving psychotropic medications but 53% of expense. In contrast, children on SSI/disability and those in foster care consumed disproportionately higher psychotropic medication expense than their representation among children receiving psychotropic medications. Together, these two populations accounted for 47% of total psychotropic medication expenditures but were slightly less than a third (32%) of those receiving psychotropic medications.

TANF-enrolled children receiving ADHD medications accounted for the largest single psychotropic medication expenditure in all three study years, followed by children on SSI/disability and children in TANF receiving antipsychotics. Expenditures for ADHD medications increased significantly for all aid categories of children between 2005 and 2011, and antipsychotic medication expense increased significantly for the TANF population and children on SSI. ADHD medications increased 140% for TANF-enrolled children between 2005 and 2011, 108% for children on SSI/disability, and 63% for children in foster care. Antipsychotic expense increased 94% for TANF-enrolled children, 55% for children on SSI/disability, but only 4% for children in foster care. Expenditures for all other medication types decreased between 2005 and 2011, except for anxiety medications for the TANF population, which increased 19%.

Exhibit 23. Total Expenditures for Psychotropic Medications for Children in Medicaid, by Aid Category, 2005, 2008, and 2011

Medication Type	2005				2008				2011			
	Overall	TANF	Foster Care	SSI/Disabled	Overall	TANF	Foster Care	SSI/Disabled	Overall	TANF	Foster Care	SSI/Disabled
ADHD Medications	$664,624,768	$393,133,568	$109,926,032	$161,565,168	$861,503,424	$476,037,152	$153,304,544	$232,161,760	$1,459,806,918	$945,465,216	$178,749,914	$335,591,788
Anti-depressants	$144,229,760	$72,070,352	$33,484,504	$38,674,896	$90,314,032	$40,341,488	$21,809,780	$28,162,764	$87,907,376	$49,620,928	$14,728,411	$23,558,037
Anti-psychotics	$671,728,768	$212,278,752	$174,858,640	$284,591,392	$1,018,931,520	$309,371,552	$257,621,648	$451,938,336	$1,074,571,249	$411,729,298	$221,562,577	$441,279,374
Mood Stabilizers	$112,971,192	$33,248,626	$22,173,216	$57,549,352	$227,060,128	$60,295,376	$36,701,276	$130,063,480	$99,911,978	$32,530,276	$11,227,253	$56,154,449
Anxiety Medications	$4,964,864	$1,376,262	$545,387	$3,043,215	$4,923,307	$1,336,563	$490,023	$3,096,721	$4,322,524	$1,631,707	$352,874	$2,337,943
Lithium*	$4,273,958	$1,264,966	$1,208,967	$1,800,025	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Expense	**$1.60B**	**$713,372,526**	**$342,196,746**	**$547,224,048**	**$2.20B**	**$887,382,131**	**$469,927,271**	**$845,423,061**	**$2.73B**	**$1.44B**	**$426,621,029**	**$858,921,591**

**Lithium was added to the Mood Stabilizer category in 2008 and 2011.*

Total Psychotropic Medication Expenditures by Medication Type and Gender (Exhibit 24)

Males accounted for 70% of total psychotropic medication expense in both 2008 and 2011 yet were only 64% of the child population receiving psychotropic medications. Girls accounted for 30% of psychotropic medication expense and were 36% of those receiving medication (expense data by gender for 2005 were not available). ADHD medication total expense was over two and a half times higher for boys than for girls in 2011 and over twice as high for antipsychotics. On the other hand, ADHD medication expense increased to a greater degree for girls — a 75% increase in expense for girls between 2008 and 2011, compared to 67% for boys — and antipsychotic expenditures increased 15% for girls and only 2% for boys. Expenditures for all other medication types decreased from 2008 to 2011 for both boys and girls, except for antidepressants, which increased 3% for girls. There was an especially notable drop in expenditures for mood stabilizers for both boys and girls, decreasing over 500% between 2008 and 2011.

Exhibit 24. Total Expenditures for Psychotropic Medications for Children in Medicaid, by Gender, 2008 and 2011

Medication Type	2008			2011		
	Overall	Female	Male	Overall	Female	Male
ADHD Medications	$861,503,424	$230,692,608	$630,796,160	$1,459,806,918	$404,519,336	$1,055,260,209
Antidepressants	$90,314,032	$41,489,664	$48,820,208	$87,907,376	$42,584,560	$45,321,036
Antipsychotics	$1,018,931,520	$301,056,608	$717,856,448	$1,074,571,249	$344,770,273	$729,798,585
Mood Stabilizers	$227,060,128	$89,610,120	$137,449,248	$99,911,978	$39,087,164	$60,824,366
Anxiety Medications	$4,923,307	$2,141,099	$2,782,070	$4,322,524	$1,931,833	$2,390,608
Total Expense	**$2,202,732,411**	**$664,990,099**	**$1,537,704,134**	**$2,726,520,045**	**$832,893,166**	**$1,893,594,804**

Total Psychotropic Medication Expenditures by Medication Type and Race/Ethnicity (Exhibit 25)

In both 2008 and 2011, White children accounted for the largest share of psychotropic medication expenditures (58% in both years), followed by BL/AA children at about 18%. White children used slightly more psychotropic medication dollars in 2011 than their representation among those using psychotropic medications at 56%. All other racial/ethnic groups used dollars equivalent to or slightly less than their representation among those receiving psychotropic medications. (Note that data by race/ethnicity are not available for 2005.)

Total psychotropic medication expense increased for all racial/ethnic groups between 2008 and 2011, except for NH/PI children, whose psychotropic medication expense decreased by 12%. Psychotropic medication expenditures for all children increased 24% between 2008 and 2011. Two racial/ethnic cohorts — Hispanic/Latino children of more than one race and Multiracial children — experienced much larger increases, 49% and 119%, respectively. Other cohorts experienced smaller increases to varying degrees — White children, 23% increase; BL/AA children, 15% increase; Hispanic/Latino children, 22% increase; Asian children, 19% increase, and AI/AN children, 3% increase.

White children receiving ADHD medications accounted for the largest expenditure by medication type in both 2008 and 2011, and White children receiving antipsychotics accounted for the second highest expenditure by medication type in both years. White children accounted for 61% of ADHD medication spending in 2011 and 55% of antipsychotic expenditures. BL/AA children receiving ADHD medication accounted for the third highest expenditure by medication type in 2011, representing 17% of ADHD medication spending in 2011, and BL/AA children receiving antipsychotics represented the third highest expenditure group in 2008, accounting for 20% of all antipsychotic spending in that year.

ADHD medication spending increased 69% for all racial/ethnic groups of children between 2008 and 2011. For certain cohorts, the increase was considerably higher: Multiracial children, 195% increase; Hispanic/Latino children of more than one race,

99% increase; Asian children, 82% increase, and Hispanic/Latino children, 75% increase. The remaining cohorts had smaller increases to varying degrees: White children, 67% increase; BL/AA children, 55% increase; AI/AN children, 39% increase; and NH/PI children, 24% increase.

Antipsychotic expenditures increased by about 5% for all children between 2008 and 2011. Certain cohorts experienced much larger increases, including: Multiracial children with an 85% increase, Hispanic/Latino children of more than one race with a 34% increase, and Asian children with a 16% increase.

Expenditures for antidepressants decreased 3% for children in general between 2008 and 2011, but increased for Asian, Hispanic/Latino, Hispanic/Latino of more than one race, and Multiracial children. Expenditures for mood stabilizers decreased 56% for children in general between 2008 and 2011 and for all racial/ethnic groups. Expenditures for anxiety medications decreased 12% for children in general between 2008 and 2011 and for most racial/ethnic cohorts, except for Hispanic/Latino children of more than one race and Multiracial children, who experienced a 22% increase and a 56% increase, respectively.

Exhibit 25. Total Expenditures for Psychotropic Medications for Children in Medicaid, by Race and Ethnicity, 2008

Medication Type	2008									
	Overall	White	Black/African American	American Indian/ Alaska Native	Asian	Hispanic or Latino	Native Hawaiian/ Pacific Islander	Hispanic/ Latino + one/more races	More than one race	Unknown
2008										
ADHD Medications	$861,503,424	$528,287,680	$163,915,680	$10,976,979	$2,001,835	$58,726,648	$914,336	$17,115,396	$3,824,312	$75,740,592
Antidepressants	$90,314,032	$57,913,648	$13,311,796	$1,594,217	$392,763	$7,250,653	$177,814	$1,830,749	$326,104	$7,516,285
Antipsychotics	$1,018,931,520	$572,917,696	$205,734,288	$12,250,139	$4,536,647	$73,820,992	$2,394,153	$24,729,696	$4,555,325	$117,992,608
Mood Stabilizers	$227,060,128	$126,632,296	$35,788,632	$2,507,425	$1,594,814	$19,326,970	$626,185	$4,813,134	$798,902	$34,971,776
Anxiety Medications	$4,923,307	$2,733,075	$614,571	$71,354	$49,032	$573,945	$32,164	$75,273	$14,508	$759,385
Total Expense	**$2,202,732,411**	**$1,288,484,395**	**$419,364,967**	**$27,400,114**	**$8,575,091**	**$159,699,208**	**$4,144,652**	**$48,564,248**	**$9,519,151**	**$236,980,646**
2011										
ADHD Medications	$1,459,806,918	$884,931,906	$254,592,665	$15,203,372	$3,652,775	$102,761,101	$1,131,274	$34,036,510	$11,295,344	$152,201,971
Antidepressants	$87,907,376	$54,767,975	$11,201,598	$1,338,835	$411,050	$8,231,424	$121,733	$2,193,375	$550,832	$9,090,554
Antipsychotics	$1,074,571,249	$592,600,719	$201,776,526	$10,666,087	$5,265,980	$74,783,729	$2,106,624	$33,180,578	$8,437,938	$145,753,068
Mood Stabilizers	$99,911,978	$51,438,789	$14,685,968	$899,414	$859,726	$9,200,428	$268,404	$2,896,638	$516,546	$19,146,065
Anxiety Medications	$4,322,524	$2,292,947	$559,546	$57,519	$44,311	$470,443	$8,685	$91,529	$22,610	$774,934
Total Expense	**$2,726,520,045**	**$1,586,032,336**	**$482,816,303**	**$28,165,227**	**$10,233,842**	**$195,447,125**	**$3,636,720**	**$72,398,630**	**$20,823,270**	**$326,966,592**

Mean Psychotropic Medication Expenditures (Exhibit 26)

Psychotropic medication mean expenditures increased 94% between 2005 and 2011, going from $650 in 2005, to $1,195 in 2008, to $1,264 in 2011. The increase was driven by expenditures for ADHD and antipsychotic medications. Mean expense increased the most, by 73%, for ADHD medications during this period, from $568 in 2005, to $699 in 2008, to $982 in 2011. Mean expense for antipsychotics, which had the highest mean of any medication type in all study years, increased 33%, from $1,516 in 2005 to $1,941 in 2008, to $2,011 in 2011. Mean expenditures for all other medication types decreased between 2005 and 2011. Anti-anxiety medications, which had the lowest mean of any medication type, decreased 34% between 2005 and 2011, from $49 in 2005, to $41 in 2008, to $32 in 2011. The mean expense for antidepressants also decreased, by 48%, between 2005 and 2011, going from $247 in 2005, to $155 in 2008, to $128 in 2011. The largest decrease in mean expense was for mood stabilizers, which fell 52% between 2005 and 2011, from $908 in 2005, to $901 in 2008, to $440 in 2011.

Mean Psychotropic Medication Expenditures by Age Group (Exhibit 26)

Between 2005 and 2011, psychotropic medication mean expense increased significantly for all age groups. Mean expense for young children increased 86%, from $386 in 2005, to $696 in 2008, to $719 in 2011. The increase was driven almost entirely by a 108% increase in mean expenditures for ADHD medications for young children, ages 0-5, going from $332 in 2005, to $477 in 2008, to $691 in 2011. There was also a very small increase of 3% in mean expenditures for antipsychotics for young children between 2005 and 2011, although there was a notable decrease of 24% in antipsychotic mean expense for this age group between 2008 and 2011. Mean expenditures for all other medication types decreased or remained stable for this age group between 2005 and 2011.

Mean psychotropic medication expenditures increased most, by 100%, for children, ages 6-12, from $644 in 2005, to $1,183 in 2008, to $1,290 in 2011. The increase was driven by a 77% increase in mean expense for ADHD medications and a 27% increase in antipsychotic mean expense. ADHD medication mean expense for this age group went from $571 in 2005, to $714 in 2008, to $1,010 in 2011, and antipsychotic medication mean expense increased from $1,437 in 2005, to $1,875 in 2008, to $1,828 in 2011. Mean expenditures for all other medication types decreased for this age group between 2005 and 2011.

In all study years, adolescents, ages 13-18, had the highest overall mean psychotropic medication expense of any age group, and their mean psychotropic medication expenditures increased 98% between 2005 and 2011, from $678 in 2005, to $1,332 in 2008, to $1,344 in 2011. The increase was driven by a 70% increase in mean expense for ADHD medications and a 43% increase in antipsychotic mean expense. ADHD medication mean expense went from $594 in 2005, to $738 in 2008, to $1,010 in 2011. Antipsychotic mean expenditures went from $1,630 in 2005, to $2,112 in 2008, to $2,329 in 2011. Mean expenditures for all other medication types decreased for this age group between 2005 and 2011.

In all three study years, adolescents had the highest mean expense for antipsychotic medications and antidepressants. In 2005 and 2008, they also had the highest mean expense for ADHD medications, but, in 2011, children, ages 6-12, and adolescents had equivalent mean ADHD mean expense. In 2005 and 2008, adolescents had the highest mean expense for mood stabilizers, but, in 2011, children, ages 6-12, had slightly higher mean expense for mood stabilizers. Young children, ages 0-5, had slightly higher mean expense than either children, ages 6-12, or adolescents for anxiety medications in 2011, which was not the case in 2008, when children, ages 6-12, had the highest mean expense, or in 2005 when adolescents had the highest mean expense for anxiety medications.

Exhibit 26. Mean Psychotropic Medication Expenditures for Children in Medicaid in Total and by Age Group, 2005, 2008, and 2011

Medication Type	2005				2008				2011			
	Overall	Ages 0 – 5	Ages 6 – 12	Ages 13 – 18	Overall	Ages 0 – 5	Ages 6 – 12	Ages 13 – 18	Overall	Ages 0 – 5	Ages 6 – 12	Ages 13 – 18
ADHD Medications	$568	$332	$571	$594	$699	$477	$714	$738	$982	$691	$1,010	$1,010
Antidepressants	$247	$102	$205	$272	$155	$66	$123	$177	$128	$64	$108	$142
Antipsychotics	$1,516	$867	$1,437	$1,630	$1,941	$1,175	$1,875	$2,112	$2,011	$889	$1,828	$2,329
Mood Stabilizers	$826	$805	$815	$834	$901	$767	$903	$919	$440	$427	$466	$423
Anxiety Medications	$49	$35	$49	$52	$41	$37	$44	$40	$32	$35	$34	$30
Lithium*	$139	$50	$117	$149	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Mean Expense	**$650**	**$386**	**$644**	**$678**	**$1,195**	**$696**	**$1,173**	**$1,332**	**$1,264**	**$719**	**$1,290**	**$1,344**

**Lithium was added to the Mood Stabilizer category in 2008 and 2011.*

Mean Psychotropic Medication Expenditures by Aid Category (Exhibit 27)

Children in foster care had the highest mean expense for psychotropic medication in all three study years and the largest increase in mean expense of any aid category between 2005 and 2011. Mean psychotropic medication expense for the foster care population increased 122%, from $934 in 2005, to $2,039 in 2008, to $2,072 in 2011. The increase was driven by a 61% increase in mean expense for ADHD medications and a 34% increase in antipsychotic medication mean expense. ADHD medication mean expense for children in foster care went from $762 in 2005, to $970 in 2008, to $1,230 in 2011, and antipsychotic mean expense increased from $1,955 in 2005, to $2,524 in 2008, to $2,623 in 2011. Mean expenditures for all other medication types decreased for children in foster care between 2005 and 2011.

The TANF population, which has had the lowest mean psychotropic medication expense in all three study years, nonetheless experienced the second highest increase (105%) in psychotropic medication mean expense between 2005 and 2011, going from $475 in 2005, to $758 in 2008, to $975 in 2011. The increase was driven by an 82% increase in ADHD medication mean expense and a 52% increase in antipsychotic medication mean expense. ADHD medication mean expense for the TANF population went from $499 in 2005, to $591 in 2008, to $909 in 2011, and antipsychotic mean expenditures went from $1,045 in 2005, to $1,325 in 2008, to $1,586 in 2011. Mean expenditures for all other medication types decreased for the TANF population between 2005 and 2011.

Mean psychotropic medication expense for children on SSI/disability increased 98% between 2005 and 2011, from $916 in 2005, to $1,910 in 2008, down to $1,813 in 2011. The increase was driven by a 63% increase in mean expense for ADHD medications and a 23% increase in antipsychotic mean expense. ADHD medication mean expense for the SSI/disability population went from $683 in 2005, to $866 in 2008, to $1,110 in 2011, and antipsychotic medication mean expenditures increased from $1,891 in 2005, to $2,387 in 2008, down to $2,317 in 2011. Mean expenditures for all other medication types decreased for the SSI/disability population between 2005 and 2011.

In all three study years, children in foster care had the highest mean expenditures for ADHD medications, antidepressants, and antipsychotics. Children on SSI/disability had the highest mean expense in all study years for mood stabilizers and anxiety medications. Children enrolled through TANF consistently had the lowest mean expense for every medication type.

Exhibit 27. Mean Psychotropic Medication Expenditures for Children in Medicaid by Aid Category, 2005, 2008, and 2011

Medication Type	2005				2008				2011			
	Overall	TANF	Foster Care	SSI/Disabled	Overall	TANF	Foster Care	SSI/Disabled	Overall	TANF	Foster Care	SSI/Disabled
ADHD Medications	$568	$499	$762	$683	$699	591	970	866	$982	$909	$1,233	$1,110
Antidepressants	$247	$194	$363	$317	$155	112	245	208	$128	$108	$185	$158
Antipsychotics	$1,516	$1,045	$1,955	$1,891	$1,941	1,325	2,524	2,387	$2,011	$1,586	$2,623	$2,317
Mood Stabilizers	$826	$508	$861	$1.265	$901	584	946	1,183	$440	$319	$376	$588
Anxiety Medications	$49	$22	$73	$97	$41	19	55	76	$32	$19	$45	$56
Lithium*	$139	$105	$165	$158	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Mean Expense	**$650**	**$475**	**$934**	**$916**	**$1,195**	**758**	**2,039**	**1,910**	**$1,264**	**$975**	**$2,072**	**$1,813**

**Lithium was added to the Mood Stabilizer category in 2008 and 2011.*

Mean Psychotropic Medication Expenditures by Gender (Exhibit 28)

In 2011 and 2008, boys had higher overall mean psychotropic medication expense than girls and higher mean expense for every medication type, except mood stabilizers, for which girls had a slightly higher mean expense in both years. (Note that 2005 mean expense data by gender are not available). Highest mean expense for both groups was for antipsychotics, and in 2011, mean expense for antipsychotics for girls approached that of boys ($1,999 versus $2,016), with girls experiencing a 10% increase in antipsychotic mean expense between 2008 and 2011, compared to a 0.8% increase for boys. Second highest mean expense for both groups was for ADHD medications, with both boys and girls experiencing about a 40% increase in mean expense for ADHD medications between 2008 and 2011. Mean expense for antidepressants decreased for boys by 20% between 2008 and 2011 and for girls, 15%. Both boys and girls experienced about a 51% decrease in mean expense for mood stabilizers, and both had a 20-23% decrease in mean expense for anxiety medications.

Exhibit 28. Mean Psychotropic Medication Expenditures for Children in Medicaid by Gender, 2008 and 2011

Medication Type	2008			2011		
	Overall	Female	Male	Overall	Female	Male
ADHD Medications	$699	$663	$713	$982	$937	$1,000
Antidepressants	$155	$148	$161	$128	$126	$129
Antipsychotics	$1,941	$1,815	$2,000	$2,011	$1,999	$2,016
Mood Stabilizers	$901	$921	$888	$440	$440	$439
Anxiety Medications	$41	$35	$47	$32	$28	$36
Mean Expense	**$1,195**	**$1,008**	**$1,299**	**$1,264**	**$1,067**	**$1,376**

Mean Psychotropic Medication Expenditures by Race/Ethnicity (Exhibit 29)

NH/PI children had the highest overall mean psychotropic medication expense of any racial/ethnic category of children in both 2008 and 2011, even with a slight decrease (0.5%) in mean expense between the two years. (Note that 2005 mean psychotropic medication expense data by race/ethnicity are not available). In 2008, Multiracial children had the same highest mean expense as NH/PI children, but their mean expense decreased by 6% between 2008 and 2011, taking them out of the highest mean expense ranking. Hispanic/Latino children had the lowest mean psychotropic medication expense in both years, even though their mean expense increased by 5% between 2008 and 2011. White children, who had the second highest mean expense in both years, also experienced the largest increase (8%) in mean psychotropic medication expense between 2008 and 2011. BL/AA children had a 6% increase in mean psychotropic medication expense, and AI/AN children had a 3% increase. Asian children experienced a 2% decrease in mean expense between 2008 and 2011.

While Multiracial children had the highest mean expense for ADHD medications in 2008, White children had the highest ADHD medication mean expense in 2011, and, along with Hispanic/Latino children, had the largest increase in ADHD medication expense between 2008 and 2011, a 43% increase for each group. In contrast, Multiracial children experienced a 24% increase. NH/PI children had the highest mean expenditures for antipsychotic medications in both years and the largest increase in antipsychotic medication mean expense between 2008 and 2011, a 9% increase. NH/PI children also had the highest mean expense for antidepressants in both years, and they had the highest mean expense for mood stabilizers in 2011, though not in 2008, when Asian children had the highest mean expense. NH/PI children had the highest mean expense for anxiety medications in 2008, but AI/AN children had that distinction in 2011.

Exhibit 29. Mean Psychotropic Medication Expenditures for Children in Medicaid by Race and Ethnicity, 2008 and 2011

Medication Type	2008									
	Overall	White	Black/African American	American Indian/ Alaska Native	Asian	Hispanic or Latino	Native Hawaiian/ Pacific Islander	Hispanic/ Latino + one/more races	More than one race	Unknown
2008										
ADHD Medications	$699	$741	$608	$740	$536	$563	$632	$740	$775	$781
Antidepressants	$155	$157	$145	$159	$141	$137	$186	$157	$143	$175
Antipsychotics	$1,941	$1,964	$1,856	$1,841	$1,982	$1,712	$2,497	$1,893	$2,053	$2,185
Mood Stabilizers	$901	$892	$793	$847	$1,015	$828	$944	$944	$848	$1,150
Anxiety Medications	$41	$38	$36	$42	$49	$38	$97	$36	$44	$62
Mean Expense	**$1,195**	**$1,215**	**$1,111**	**$1,099**	**$1,015**	**$930**	**$1,333**	**$1,254**	**$1,333**	**$1,560**
2011										
ADHD Medications	$982	$1,058	$844	$992	$764	$810	$845	$860	$958	$1,019
Antidepressants	$128	$130	$112	$132	$123	$133	$138	$109	$99	$140
Antipsychotics	$2,011	$2,105	$1,882	$1,993	$2,089	$1,755	$2,729	$1,889	$1,951	$2,009
Mood Stabilizers	$440	$418	$383	$386	$541	$497	$617	$434	$322	$551
Anxiety Medications	$32	$30	$31	$38	$35	$26	$30	$28	$32	$47
Mean Expense	**$1,264**	**$1,314**	**$1,174**	**$1,136**	**$997**	**$973**	**$1,326**	**$1,151**	**$1,255**	**$1,484**

Mean Psychotropic Medication Expenditures by Diagnosis (Exhibit 30)

In 2008 and 2011, antipsychotic medications prescribed for those with diagnoses of Psychosis had the highest mean expenditure of any medication or diagnostic group, which was not the case in 2005, when antipsychotic medications prescribed for those with ADHD had the highest mean expense. Interestingly, in 2005, except for ADHD and Psychosis, all other diagnostic categories had lower mean expense than the average mean expenditure for antipsychotic medications, but that was not the case in either 2008 and 2011 when all diagnostic groups except the No Diagnosis category had higher than average or equivalent to average mean expenditures for antipsychotics. Between 2005 and 2008, antipsychotic mean expense increased 28% for all children and by 4% between 2008 and 2011. There were especially large spikes in mean antipsychotic medication expense between 2005 and 2008 for certain diagnostic groups — a 111% increase for those with Anxiety, 108% increase for those with Conduct Disorder, 97% increase for those with Developmental Disability, 70% increase for those with Psychosis, 64% increase for those with Mood Disorder, and an over 800% increase for those with No Diagnosis. The only group between 2005 and 2011 with a lower than average increase in mean expense for antipsychotics was children with ADHD, who had an 11% increase. Similarly, between 2008 and 2011, there were certain diagnostic groups with larger than the average 4% mean expenditure increase for antipsychotics, including: a 15% increase for those with PTSD and a 10% increase both for children with mood disorders and those with Anxiety. Children with Developmental Disability experienced a 6% reduction in mean expense for antipsychotics between 2008 and 2011, and children with No Diagnosis had a 13% reduction. In all three study years, anxiety medications for those with a diagnosis of Anxiety had the lowest mean expense.

Exhibit 30. Mean Psychotropic Medication Expenditures for Children in Medicaid by Psychiatric Diagnoses, 2005

Medication Type	Overall	ADHD	Conduct Disorder	Mood	Anxiety	PTSD	Devel. Disability	Psychosis	Other Diagnosis	No diagnosis
2005										
ADHD Medications	$568	$510	$345	$516	$375	N/A	$451	$428	$263	$68
Antidepressants	$247	$301	$167	$231	$166	N/A	$223	$232	$154	$31
Antipsychotics	$1,516	$1,772	$1,025	$1,332	$954	N/A	$1,408	$1,646	$717	$177
Mood Stabilizers	$826	$837	$451	$522	$429	N/A	$873	$627	$341	$131
Anxiety Medications	$49	$55	$30	$39	$21	N/A	$44	$47	$24	$8
Lithium*	$139	$170	$79	$108	$79	N/A	$115	$105	$46	$17
Mean Expense	**$650**	**$690**	**$492**	**$642**	**$409**	**N/A**	**$734**	**$838**	**$356**	**$78**
2008										
ADHD Medications	$699	$753	$785	$831	$789	$891	$889	$830	$874	$517
Antidepressants	$155	$172	$178	$186	$174	$215	$221	$214	$202	$105
Antipsychotics	$1,941	$1,970	$2,134	$2,189	$2,014	$2,496	$2,774	$2,806	$2,550	$1,583
Mood Stabilizers	$901	$779	$781	$725	$757	$815	$1,238	$812	$846	$1,116
Anxiety Medications	$41	$41	$42	$37	$32	$39	$66	$44	$47	$43
Mean Expense	**$1,195**	**$1,325**	**$1,791**	**$1,884**	**$1,364**	**$2,245**	**$2,622**	**$3,081**	**$2,290**	**$734**
2011										
ADHD Medications	$982	$1,045	$1,060	$1,123	$1,081	$1,174	$1,212	$1,094	$1,132	$708
Antidepressants	$128	$141	$143	$153	$146	$172	$177	$170	$164	$79
Antipsychotics	$2,011	$2,010	$2,212	$2,403	$2,215	$2,734	$2,617	$2,863	$2,709	$1,382
Mood Stabilizers	$440	$343	$322	$287	$317	$295	$645	$321	$338	$640
Anxiety Medications	$32	$33	$32	$31	$28	$32	$43	$34	$35	$33
Mean Expense	**$1,264**	**$1,476**	**$1,801**	**$1,885**	**$1,380**	**$2,189**	**$2,404**	**$2,888**	**$2,240**	**$652**

**Lithium was added to the Mood Stabilizer category in 2008 and 2011*

Highlights and Implications of the Data

Medicaid expenditures for psychotropic medication for children increased 69% between 2005 and 2011, far more than the 16% increase in the percent of children receiving psychotropic medications. The increase in psychotropic medication expenditures was driven entirely by increases in ADHD and antipsychotic medication expenditures, with total expenditures decreasing for all other medication types. In 2011, $1.5 billion was spent on ADHD medications, accounting for 56% of all psychotropic medication expenditures and representing a 119% increase in expense from 2005. Mean expense for ADHD medications increased 73% between 2005 and 2011 — more than for any other class of psychotropic medications. Expenditures on antipsychotic medications totaled $1 billion in 2011, 46% of total psychotropic medication expense and a 60% increase over 2005. While mean expense for antipsychotics increased only 33%, antipsychotics consistently had the highest mean expense of any psychotropic medication type in all three study years — over $2,000 in 2011. As was the case with total expenditures, mean expense for all other medication types decreased between 2005 and 2011. The increase in expenditures for ADHD and antipsychotic medications was driven only partially by increased numbers of children receiving these medications. Between 2005 and 2011, 27% more children (over 300,000 children) were prescribed ADHD medications, while total expense increased 119%; 21% more children (over 91,000) were prescribed antipsychotics, while total expense increased 60%. The greater share of the increased expense for these medications is attributable either to higher unit cost or higher individual dosage driving up the mean expense. The data indicate that recent federal and state attention to the use and cost of both ADHD and antipsychotic medications is

warranted. It will be important to track whether this heightened attention affects utilization and expenditures going forward.

Because they represented the largest cohort of children in Medicaid (92%), children enrolled through TANF accounted for the largest share of psychotropic medication expenditures — 53% in 2011. However, almost a third of total medication expense was attributable to children on SSI/disability and about 22% to children in foster care. Together, these two populations made up only 8% of the total Medicaid child population in 2011 but represented 47% of all psychotropic medication expenditures and nearly a third of all psychotropic medication users. Children in foster care had the highest mean psychotropic medication expense in all three study years ($2,072 in 2011) and the largest increase in mean expense — 122% — between 2005 and 2011, driven entirely by increased mean expenditures for ADHD and antipsychotic medications. Children in foster care had the highest mean expense in all three study years for ADHD medications, antipsychotics, and antidepressants. Children on SSI/disability had the highest mean expense for mood stabilizers and anxiety medications. While children enrolled through TANF had the lowest psychotropic medication mean expense for all medication types in all study years, they nonetheless experienced the second highest increase (to the foster care population) in psychotropic medication mean expense between 2005 and 2011 (from $475 to $975, a 105% increase), driven, again, by increased mean expenditures for ADHD and antipsychotic medications. Also, total psychotropic medication expense doubled for the TANF population between 2005 and 2011, the largest increase in total expense of any aid category. There are clear implications from the data for improved psychotropic medication oversight for the foster care and SSI/disability populations, given their high rate of psychotropic medication use and associated expense. However, it would be a mistake to not devote similar attention to the TANF population, given their large numbers, majority share of total psychotropic medication expenditures, and growing mean and total expense.

Boys disproportionately account for a higher share of psychotropic medication expenditures than girls, consuming 70% of total expense in 2011 but representing only 64% of those receiving psychotropic medications. ADHD medication total expense was over two and a half times higher for boys in 2011 and two times higher for antipsychotic medications. On the other hand, ADHD and antipsychotic medication expenditures increased at a higher rate for girls than boys between 2008 and 2011 (75% to 67% for ADHD medications and 15% to 2% for antipsychotic medications). Girls also had a slight (3%) increase in total expenditures for antidepressants, while antidepressant medication expense decreased for boys. Boys have higher mean expenditures for all medication types except mood stabilizers, and, in 2011, antipsychotic medication mean expense for girls began to approach that of boys ($1,999 versus $2,016), with girls experiencing a 10% increase in antipsychotic medication mean expense between 2008 and 2011, compared to 0.8% for boys.

In 2005, adolescents, ages 13-18, claimed the largest share of total psychotropic medication expenditures of any age group, but that was not the case in 2008 or 2011 as children, ages 6-12, steadily increased their share to 53%. The increase is due partly to increased numbers of children, ages 6-12, in the Medicaid population and a declining number of adolescents; however, it also is due to a 100% increase in psychotropic medication mean expense for the children, ages 6-12, larger than for any other age group. It should also be noted that while young children, ages 0-5, used only 5% of total psychotropic medication expenditures in 2011, this use represented a 243% increase over 2005, driven partly by their increased numbers in the Medicaid child population and among those using psychotropic medication. Another contributing factor was an 86% increase in mean psychotropic medication expense between 2005 and 2011. In the earlier study years, adolescents tended to have the highest mean expenditures for all medication types, but in 2011, children, ages 6-12, had equivalent mean expense for ADHD medications and slightly higher mean expense for mood stabilizers, and young children, ages 0-5, had slightly higher mean expense for anxiety medications. The data are troubling with respect to young children. More is being spent on both young children, ages 0-5, and children, ages 6-12, both because their numbers among those using psychotropic medications have grown and because their mean psychotropic medication expense has increased. Much of the increase is driven by ADHD medications. In recent years, more states have begun to monitor psychotropic medication use and spending related to young children, particularly with respect to antipsychotics. Between 2008 and 2011, total and mean expenditures for antipsychotics indeed went down for the young children, ages 0-5, population. However, total and mean expenditures for ADHD medications for this age group increased significantly during this timeframe, 67% and 45%, respectively. Similarly, mean expenditures for antipsychotics went down between 2008 and 2011 for children, ages 6-12,: their total expense for antipsychotics increased only slightly (2%), but their ADHD total expense increased 73% and mean expense by 41%. It may be that the heightened attention to the use of antipsychotics

is beginning to have an impact and that increased scrutiny is needed with respect to ADHD medications.

Among all racial/ethnic cohorts, White children accounted for the largest and disproportionately higher share of total psychotropic medication expenditures (58% in both 2008 and 2011). All other racial/ethnic groups consumed psychotropic medication dollars equivalent to or less than their representation among those using psychotropic medications. Total psychotropic medication expenditures increased for all racial/ethnic groups, except NH/PI children due primarily to their declining numbers in the Medicaid child population. Hispanic/Latino children of more than one race and Multiracial children experienced much larger increases in total psychotropic medication expenditures than other groups, due to their increased numbers among children in the Medicaid child population and among those using psychotropic medications. White children receiving ADHD medications and White children receiving antipsychotics accounted for the first- and second-highest expenditure by medication type. ADHD medication expenditures increased for every racial/ethnic group between 2008 and 2011, with Multiracial, Hispanic/Latino children of more than one race, Asian, and Hispanic/Latino children experiencing larger increases than children on average — 195%, 99%, 82% and 75%, respectively, compared to a 69% increase for children in general. Antipsychotic medication expenditures increased about 5% across all racial/ethnic groups, but Multiracial, Hispanic/Latino children of more than one race, and Asian children had significantly higher increases, 85%, 34% and 16%, respectively. Although total expenses decreased for NH/PI children between 2008 and 2011, they had the highest overall mean psychotropic medication expense of any racial/ethnic cohort, including, in 2011, the highest mean expense for antipsychotics, antidepressants, and mood stabilizers. White children had the highest mean expense for ADHD medications in 2011.

There are concerning aspects to the racial/ethnic data, for example: the disproportionate psychotropic medication spending on White children; increased psychotropic medication spending across all racial/ethnic groups except NH/PI, who nonetheless have the highest mean expense, and larger than average increases in psychotropic medication expenditures in general — and for ADHD and antipsychotic medications —for Hispanic/Latino children of more than one race, Multiracial, and Asian children. Some of this variation can be attributed to the changing demographics in the Medicaid child population, but certainly not all. Longer tracking of psychotropic medication utilization and expenditures by race/ethnicity is needed to determine whether these patterns persist, and more research is needed with respect to why certain groups, such as NH/PI and White children, have notably higher mean psychotropic medication expenditures.

In all three study years, in total expense, the top three most expensive medication types by diagnosis were: children with ADHD receiving ADHD medications ($1.2 billion in 2011); children with Mood Disorder receiving antipsychotics ($625.8 million in 2011), and children with ADHD receiving antipsychotics ($559.5 million). Children with diagnoses of Conduct Disorder receiving antipsychotics or receiving ADHD medications were the next highest. Expenditures for children with any other diagnosis or medication type were half or less than half of what was spent on these children. In 2008 and 2011, antipsychotic medications prescribed for those with diagnoses of Psychosis had the highest mean expenditure of any medication or diagnostic group. Anxiety medications for those with a diagnosis of Anxiety had the lowest mean expense. These data confirm the importance of monitoring ADHD and antipsychotic medication prescribing and spending, including use of antipsychotics for children with ADHD diagnoses.

CONCLUDING OBSERVATIONS

Promising Findings

Between 2005 and 2011, the *Children's Faces of Medicaid* analysis identified several promising findings regarding behavioral health utilization among children in Medicaid. These included:

- An overall increase in penetration rates;
- Greater access by most racial/ethnic groups;
- Greater access by girls;
- Greater access by the young children, ages 0-5, population;
- Use of a broader range of home- and community- based services; and
- Some reduction between 2008 and 2011 in the use of antipsychotic medications and concurrent medications for all age groups, and especially for the young children, ages 0-5, population and for the foster care population, perhaps reflecting national and state attention to the use of psychotropic medications and especially antipsychotics for children; this will require further tracking as the rates did not decrease for most children between 2005 and 2011.

Persistent Concerns

The *Children's Faces of Medicaid* study also identified persistent concerns, including:

- The 8% penetration rate for use of behavioral health services in 2011, while up from 2005, remains well below prevalence estimates of need;
- Disproportionately low rates of use for Hispanic/Latino, Asian, and NH/PI children;
- Disproportionately low utilization rates for girls;
- Disproportionately low rates of use for the young children, ages 0-5, population;
- Persistent increases in residential treatment utilization and expense;
- The increase in inpatient psychiatric treatment use between 2008 and 2011, after decreasing between 2005 and 2008;
- Persistent increase in the rate of psychotropic medication use, with close to half of children on medications not receiving accompanying BHS. While the number of children in Medicaid increased 11% between 2005 and 2011, the number receiving psychotropic medications increased 28%, with over two million children receiving psychotropic medications in 2011. Over one million of these were children, ages 6-12,, and nearly 33,000 were young children, ages, 0-5;
- Utilization rates of peer support, MST, Wraparound, while up, remain very low;
- In 2011, 44% of total expense was for residential treatment/group care, inpatient psychiatric treatment, and psychotropic medication, compared to 22% spent on psychosocial rehabilitation, Wraparound, respite, supported housing, peer support, in-home services, and MST combined. Twenty-eight percent of all dollars were spent on residential treatment/group care and inpatient psychiatric treatment for under 10% of all children receiving services;
- In 2011, children, ages 6-12, for the first time over the course of the study, had the highest mean expenditures for residential treatment/group care, inpatient psychiatric treatment, and partial hospitalization/day treatment, suggesting that younger children, ages 0-5, may be staying longer in the most restrictive services;
- Over 10% of all White children in Medicaid received psychotropic medication in 2011, the highest rate of use of any racial/ethnic group. While non-White cohorts of children had lower rates of use, their rates increased to a greater degree than that of White children between 2005 and 2011. If access to BHS continues to improve for racially/ethnically diverse children, which was the case for most groups between 2005 and 2011, it will be important to track whether their use of psychotropic medications also continues to increase;
- Conduct Disorder was the diagnosis most frequently received by young children, ages 0-5, in 2011, no doubt related to aggressive behaviors, which may be masking other issues, such as trauma or learning problems; in comparison, the

rate of PTSD diagnosis was low for all age groups, raising a question as to whether children experiencing trauma are being misdiagnosed. In that same vein, BL/AA children were most likely to receive a diagnosis of ADHD and least likely to receive diagnoses of Mood Disorder, Anxiety, and PTSD, raising the question as to whether these children are being misdiagnosed; and

- Children in Medicaid using behavioral health care are 11% of the Medicaid child population and consume 36% of all Medicaid child expenditures, and their mean expense is over four times that of children who do not use behavioral health care, pointing to the need for effective value-based strategies for improving the cost and quality of care for these children. Similarly, total expenditures for psychotropic medication increased 69% between 2005 and 2011, to $2.7 billion, while the percent of children in Medicaid using psychotropic medications increased 16% during the same period, arguing for national and state-level strategies to reduce both the use and cost of these psychotropic medications.

Trends

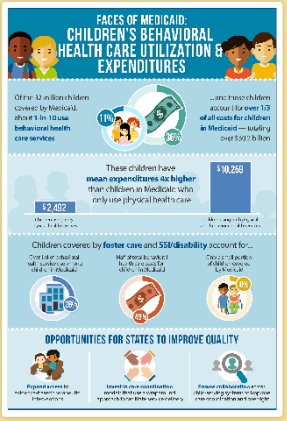
Looking ahead, there are trends in the health and behavioral health arenas that warrant continued tracking of their impact on the use and expense of behavioral health care for children in Medicaid, including:

- More children enrolled in capitated Medicaid managed care arrangements, and particularly those that combine physical and behavioral health financing within the same MCO capitation structure;
- Greater interest in value-based purchasing arrangements that incorporate outcomes tied to payment and inclusion of social determinants of health;
- Federal and state budget issues;
- More children in foster care;
- Changes in entitlement programs;
- Child welfare and Early and Periodic Screening, Diagnostic and Treatment (EPSDT) lawsuits; and
- Greater attention to use of psychotropic medication for children.

Questions and interest remain as to how these trends will impact child behavioral health use in Medicaid and affect some of the persistent concerns noted above. Analysis of Medicaid utilization and expenditure data across the total Medicaid child population is an important avenue to gauge changes over time.

Additional Resources

Since 2000, CHCS has shed light on the needs of Medicaid's most complex populations through its series of *Faces of Medicaid* data analyses. For additional resources related to this *Children's Faces of Medicaid* study, including infographics, chart book, and state toolkit for replicating the study, visit: www.chcs.org/childrens-faces-of-medicaid.



APPENDIX A: GLOSSARY OF CHILDREN'S BEHAVIORAL HEALTH SERVICES

Activity therapy: Adjunctive therapies, such as recreation, music, and art therapy, to assist children to develop interpersonal relationships, to socialize effectively, and to develop confidence needed to participate in group activities.

Behavior management consultation and training: Includes assessment of a child's behavior, antecedents of behavior and identification of motivators; development of a specific behavior plan; supervision and coordination of behavioral interventions; and training of others, such as family members, to address specific behavior objectives and performance goals.

Case management: Assists children and their families to access needed services and supports and includes assessment, care plan development, referral, and related activities to ensure access to needed services, monitoring, and follow-up.

Crisis intervention and stabilization: Includes 24-hour, seven days a week, toll-free telephone hotline services, mobile crisis services, mobile stabilization services, crisis stabilization units, crisis respite beds, and medically monitored crisis detoxification units to alleviate or prevent a crisis, help the child return to his or her baseline level of functioning, and prevent the need for an inpatient or residential admission.

Emergency room: Services provided in a hospital area especially equipped and staffed for emergency care.

Family therapy/family education and training: Family therapy is a type of psychotherapy that involves all members of a child's family and, in some cases, members of the extended family (e.g., grandparents) in which a therapist or team of therapists conducts multiple sessions to help families deal with important issues that may interfere with the functioning of the family and the home environment; family education/training are information and supports provided to the family members/caregivers of a child with a behavioral health challenge to better understand the child's disorder, service and support options, and intervention strategies.

Group therapy: A form of psychosocial treatment where a small group of youth meet regularly to talk, interact, and discuss problems with each other and the group leader (therapist).

Home-based (in-home) services: Interventions provided in the home typically to enable a child to remain in the home, including crisis intervention, individual and family counseling, behavior management and skills training, and case management.

Inpatient hospital: Inpatient hospital services provided in a psychiatric hospital or in a psychiatric unit of a general hospital.

Medication management: Facilitation of safe and effective use of prescription and over-the-counter medications to help patients achieve the targeted outcomes from medication therapy.

Mental health consultation: Any interaction between two or more health care professionals related to a specific issue of mental health or between a professional consultant with mental health expertise and one or more individuals with other areas of expertise, for example, child care center staff, with the purpose of problem-solving or capacity building.

Multisystemic Therapy (MST): A time-limited, goal-directed, home-based, team-based, and intensive family treatment program that addresses the multiple determinants of serious anti-social behavior in youth and the factors associated with such behavior across the youth's key settings or systems (e.g., family, peers, school, neighborhood); builds on the strengths of each system to foster positive change.

Outpatient counseling: Primarily individual outpatient therapy that is provided in a therapist's office.

Partial hospitalization/day treatment: Partial hospitalization is a nonresidential, highly structured day program that may or may not be hospital-based. The program provides diagnostic and treatment services on a level of intensity similar to an inpatient program, but on less than a 24-hour basis. These services typically include therapeutic milieu, nursing, psychiatric evaluation, medication management, and group, individual and family therapy. Day treatment is a community-based, nonresidential day program that is intensive but allows a child to remain in his/her home; the program lasts at least four hours per day and typically provides special education, counseling, parent training, vocational training, skill building, crisis intervention, and recreational therapy.

Peer services: Includes both family peer support and youth peer support; are non-clinical, peer-based activities that engage, educate, and support families who have children with behavioral health challenges or youth themselves; are provided by trained families or youth who have lived experience of the behavioral health system; and are based on principles of respect, shared responsibility, and mutual agreement of what is helpful.

Psychological testing: Written, visual, or verbal evaluations administered to assess the cognitive and emotional functioning of children.

Psychosocial rehabilitation: Includes an array of services that are provided in the child's home, in the location where behavioral challenges are most likely to occur, such as school or in community settings; teaches the child and his/her family about, but is not limited to:

emotional management, emotional regulation, and positive coping mechanisms; interventions include skills training that can include but are not limited to: vocational, social, educational, organizational, or personal care.

Psychotropic medication: Chemicals that affect the central nervous system, altering psychological processes (e.g., mood, thoughts, perception, emotions, behavior).

Residential treatment and therapeutic group homes: Residential treatment is mental health and/or substance use treatment in a licensed, highly structured, usually secure out-of-home program providing continuous 24-hour observation and supervision with typically a full complement of in-house programs including education; therapeutic group homes provide 24-hour out-of-home mental health and/or substance use services in a licensed, non-secure facility, with children typically involved in community-based activities, such as school, work, or recreation.

Respite: Provides temporary direct care and supervision for the child/youth in the child's home or a community setting with the primary purpose of providing relief to families/caregivers of a child with a serious emotional disturbance or relief to the child, helping to de-escalate stressful situations and provide a therapeutic outlet for the child; may be either planned or provided on an emergency basis.

Screening/assessment/evaluation: Distinct processes with different but related purposes: screening includes activities to identify children who may need further assessment to determine the existence of a behavioral health disorder; assessment is a process of gathering data from multiple sources to create a comprehensive picture of a child's strengths, challenges, and needs; evaluation is a more intensive, in-depth study in a particular area to provide additional data and recommendations.

Service planning: The process of making decisions about which services and supports are provided to individual children; informed by screening, assessment, and evaluation data.

Substance use inpatient: Hospital-based detoxification services and substance use rehabilitation counseling.

Substance use outpatient: Regularly scheduled individual, group, and/or licensed family counseling in a licensed outpatient substance use program; definition also includes intensive outpatient programs that provide a higher intensity of outpatient services over a longer period of time, supporting the daily application of what is learned in therapy, as well as outpatient detoxification services.

Substance use screening and assessment: Screening includes activities to identify youth who may need further assessment to determine the existence of a substance use disorder; assessment is a process of gathering data from multiple sources to create a comprehensive picture of a youth's strengths, challenges, and needs.

Supported housing: The combination of affordable housing with services and supports that help transition-age youth live more stable, productive lives.

Targeted Case Management (TCM): Intended for children with serious behavioral health challenges, ensures that service systems and community supports are maximally responsive to the specific, multiple, and changing needs of children and their families, with the case manager having limited, small caseloads and a flexible schedule to assist children and their families to access needed services, coordinate care, ensure services are responsive to needs as they change over time, and ensure services match the needs of children and their families.

Telehealth: The use of telecommunications and information technology to provide access to behavioral health assessment, diagnosis, interventions, consultation, supervision, education, and information.

Therapeutic behavioral support: Structured one-to-one support, coaching, and training provided by a therapeutic mentor or behavioral aide in the home, school, or other community location to help a child achieve age-appropriate behavior, interpersonal communication, problem-solving, conflict resolution, peer interaction etc.; typically delivered by a paraprofessional supervised by the supervising practitioner and included as part of the child's master treatment plan.

Therapeutic foster care: Provides a safe, secure, and nurturing environment in a private home with licensed foster parents who have received specialized training in the care of children and adolescents with emotional or substance use disorders; treatment foster parents typically provide care for one child only and perform behavioral interventions and life skills training in addition to ensuring that the child receives needed mental health and substance use services, medical care, and education.

Transportation: Transport support for providers to travel to children needing services or for children to access services.

Wraparound: A definable, individualized, and strengths-based planning and care coordination process that incorporates a child and family team and results in a unique set of services and supports for a child and family, with the plan closely monitored and care coordinated to achieve a positive set of outcomes.

APPENDIX B: GLOSSARY OF ACRONYMS

ADHD: Attention deficit hyperactivity disorder

AI/AN: American Indian or Alaska Native

BHS: Behavioral health services

BL/AA: Black or African American

CDPS: Chronic Disability Payment System

CHCS: Center for Health Care Strategies

CMS: Centers for Medicare & Medicaid Services

COD: Conduct and oppositional defiant disorder

DD: Developmental disability

DSM-5: Diagnostic and Statistical Manual of Mental Disorders

ER: Emergency room

FFS: Fee-for-service

HCBS: Home- and community-based services

ICD: International Classification of Diseases

MAX: Medicaid Analytic eXtract

MCO: Managed care organization

MST: Multisystemic Therapy

NDC: National Drug Code

NH/PI: Native Hawaiian or Pacific Islander

PTSD: Post-Traumatic Stress Disorder

SAMHSA: Substance Abuse and Mental Health Services Administration

SSI: Supplemental Security Income

SUD: Substance use disorder

TANF: Temporary Assistance for Needy Families

TCM: Targeted Case Management

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