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**Mental Health Services
for Children with Special
Health Care Needs in
Commercial Managed
Care, 1999-2001**

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EXECUTIVE SUMMARY

When some policymakers, program administrators, and researchers use the term “children with special health care needs,” they focus primarily on children with diverse physical disabilities and chronic medical conditions. Yet, many children in this group have emotional and behavioral disorders. For some children with special health care needs, emotional and behavioral disorders are primary conditions; for others, they are secondary to co-occurring physical conditions, sensory disabilities, or chronic illnesses. Mental health care for children with all of these disorders is an important component of comprehensive health insurance.

As one of its national objectives for 2010, the Maternal and Child Health Bureau (MCHB) is striving to ensure that all children with special health care needs have adequate insurance coverage, including coverage for mental health services.¹ Although some studies have examined costs of mental health services provided to children with specific types of emotional disorders, few studies have focused on mental health service use and costs within the larger population of children with special health care needs. Better information on this issue will assist the MCHB in shaping future programs and policies to meet national objectives related to insurance coverage for children with special health care needs and, more generally, to support efforts to establish comprehensive, community-based service systems for all individuals within this population.

To help develop this information, MCHB asked Mathematica Policy Research (MPR) to analyze administrative and claims data from children with special health care needs enrolled in two commercial managed care plans. MPR worked collaboratively with the Center for Health Care Policy and Evaluation (CHCPE) at UnitedHealth Group to conduct these analyses and report the results.

Specifically, we addressed the following questions:

- What proportion of privately insured children with special health care needs have emotional and behavioral disorders?
- How do the total and service-specific per member per month (PMPM) costs of care for children with emotional and behavioral disorders needs compare with other children who have special health care needs?
- What proportion of the PMPM costs are paid by subscribers through copayments and deductibles?

¹Children with special health care needs are defined as children who have or are at increased risk for a chronic physical, developmental, behavioral, or emotional condition and who also require health and related services of a type or amount beyond that required by children generally (McPherson et al. 1998).

- What are the patterns of prescription utilization and cost for psychiatric medications for children with special health care needs who need mental health services? What types of physicians commonly prescribe these kinds of medications?

To provide answers to these questions, we used three years of data from open-access, managed health care plans in two states. We examined administrative and claims data for 218,388 children in 2000, 243,442 children in 1999, and 232,615 children in 2001 and applied the Clinical Risk Group (CRG) System to identify children with special health care needs. Using the CRG system, we identified 24,807 children in 1999, 28,346 in 2000, and 29,085 in 2001 as having a special health care need. This group represented 11 to 12 percent of all children enrolled in these plans. We then removed children who did not have comprehensive benefit packages. The samples of children with special health care needs that we used for the analyses in this report totaled 23,124 in 1999, 26,237 in 2000, and 26,949 in 2001.

In the CRG system, specific diagnoses are grouped into major diagnostic categories (MDCs). One group, MDC 191, includes most of the emotional and behavioral disorders found in children, including attention deficit/hyperactivity disorder (ADHD), anxiety disorders, schizophrenia, post-traumatic stress disorders, and depression.² Children who are grouped into MDC 191 also may have other chronic medical conditions.

Using MDC 191, we identified 37 percent of children with special health care needs as having an emotional or behavioral disorder in 2001 (10,032 children). Similar percentages of children were identified in 1999 (37 percent) and 2000 (38 percent). The most common diagnosis among children with special health care needs who had emotional or behavioral disorders was ADHD. Of children with special health care needs who had emotional or behavioral disorders, 34 percent had a diagnosis of ADHD alone, and an additional 22 percent had ADHD in conjunction with another chronic condition. Other major findings are noted below.

PER MEMBER PER MONTH (PMPM) COSTS

- In 2001, total PMPM costs for children with special health care needs with emotional or behavioral disorders were 38 percent lower compared with other children with special health care needs (\$237.71 versus \$382.89), but PMPM costs for medications were 28 percent higher (\$51.36 versus \$40.12).
- Inpatient costs for children with emotional and behavioral disorders decreased by 7.5 percent from 1999 to 2001, but costs for emergency services increased by 50.8 percent. For other children in the sample, inpatient costs increased by 2.3 percent and emergency services increased by 26.8 percent during the same period.

²Autism is not included in MDC 191.

COSTS TO ENROLLED MEMBERS

- Families of children with special health care needs who had emotional and behavioral disorders paid more in copayments and deductibles than families of other children in the sample, paying an average of \$36.48 per month in 2001; in comparison, families of all other children in the sample paid 10.9 percent less (\$32.52 per month).
- Overall, the average monthly amount paid by families of children with special health needs who had emotional or behavioral disorders increased 35.4 percent between 1999 and 2001, driven largely by increases in costs for prescription drugs and emergency services, which rose by 69.2 percent and 52.3 percent, respectively.

PRESCRIPTION DRUGS

- The most common drugs prescribed to children with special health care needs who had emotional or behavioral disorders were stimulants (prescribed for 48 percent of the children in this group) and anti-depressants (prescribed for 28 percent of the children).
- Overall, psychiatrists were somewhat more likely than pediatricians to write prescriptions for children with special needs who also had emotional and behavioral disorders (including anti-depressants, stimulants, and anti-psychotics). In 2001, of the 45,306 prescriptions given to children over 5 years of age, psychiatrists wrote 34.9 percent and pediatricians wrote 31.7 percent.
- Prescribing patterns varied by drug and age. For example, pediatricians wrote 45.7 percent of the prescriptions for stimulants for children and 35.8 percent for adolescents; psychiatrists wrote 20.6 of the prescriptions for stimulants for children and 29.8 percent for adolescents.

Our findings are based on one of the largest databases assembled on costs and service use for children with special health care needs enrolled in commercial managed care plans. However, they must be interpreted in light of several limitations. Our study does not cover services excluded from the benefit packages available to members of these plans, and hence some services used by these children and families were not included in our analyses. In addition, data for this study were drawn from only two commercial managed care plans and our findings may not be generalizable to other plans.

Our findings have several implications for families, managed care plans, and the MCHB. Specifically, they suggest that:

- Parents of children with special health care needs who have emotional or behavioral disorders pay for a substantial portion of the costs of services that their children use frequently, such as mental health services and prescription drugs.

- Families of adolescents in this group are likely to be receiving prescriptions from psychiatrists rather than pediatricians; for families of school-aged children, the pattern is reversed.
- It will be important to examine further (a) the age-related variation in prescribing behavior by pediatricians and psychiatrists, and its association with health outcomes and (b) the potential relationship between trends in inpatient care and visits to emergency departments for this group of children.

The MCHB is playing a major role in monitoring progress toward achieving relevant national policy goals within the New Freedom Initiative, including seeking to assure that children with special health care needs have access to adequate, affordable health insurance. Findings from this study underscore the importance of providing national leadership in defining adequate benefit packages as including appropriate and sufficient levels of mental health care and encouraging coverage of mental health services that is comparable to coverage of traditional medical or surgical services. Children with special health care needs who have emotional and behavioral disorders and their families stand to benefit substantially from MCHB's leadership in this area.

Further analyses are needed using longitudinal databases to determine which children are at greatest risk over time for poor outcomes, a task that will require further "drill downs" to identify typical service pathways or outcomes of critical episodes of care. These analyses will be most fruitful if they are part of an effort to identify opportunities for targeted quality improvement initiatives. Hence, one of the most important next steps will be to encourage managed care plans to pursue such initiatives in relation to this population of children. The MCHB can play a key role in this effort by working with the leadership of commercial MCOs to develop quality improvement projects for children with special health care needs.

I. INTRODUCTION

When some policymakers and health plan administrators refer to “children with special health care needs,” they focus primarily on children with diverse *physical* disabilities and chronic *medical* conditions. Yet, many children in this group have emotional and behavioral disorders. For some children with special health care needs (for example, children with attention deficit/hyperactivity disorders), the emotional or behavioral disorder is their primary or only chronic condition. For others (such as some children with cancer who are highly anxious), the emotional or behavioral disorder is co-occurring with a physical condition, sensory impairment, or chronic illness. Mental health care to treat emotional and behavioral disorders is an important component of a comprehensive benefit package for these children.

Understanding the extent of emotional and behavioral disorders within this group of children is particularly important for the Maternal and Child Health Bureau (MCHB) in the Health Resources and Services Administration (HRSA) because one of its national goals for 2010 is ensuring that all children with special health care needs have adequate insurance coverage for needed services.¹ National survey data from 2001 indicate that 25.4 percent of children with special health care needs required mental health care and 4.5 percent had an unmet need for mental health services (DHHS 2004). Overall, about sixty percent of all children with special needs have private health insurance (DHHS 2004). Although a large proportion of children with special health care needs have emotional or behavioral problems, few studies of health services

¹Children with special health care needs are defined as children who have or are at increased risk for a chronic physical, developmental, behavioral, or emotional condition and who also require health and related services of a type or amount beyond that required by children generally (McPherson et al. 1998).

used by this population have focused specifically on mental health care for children with special health care needs enrolled in private managed care plans.

Better information on the pattern and costs of mental health services for these children will help MCHB achieve its national goals. Such information also may assist health plans to manage benefit packages efficiently or develop effective care management programs for children with complex or multiple service needs.

To help strengthen the foundation of information on mental health services for children with special health care needs, the MCHB asked Mathematica Policy Research (MPR) to analyze administrative and claims data for children with special health care needs enrolled in commercial managed care plans. MPR worked collaboratively with the Center for Health Care Policy and Evaluation (CHCPE) at UnitedHealth Group to conduct the analyses and present results. CHCPE identified two UnitedHealth Group plans (one in a southern state and one in a mid-western state), which together had approximately 300,000 children enrolled in each of three years (1999-2001). We identified children with special health care needs using the Clinical Risk Group (CRG) system, developed by the National Association of Children's Hospitals and Related Institutions (NACHRI) and 3M (see Neff et al. 2001). We then excluded children who did not have comprehensive coverage because we would be unable to estimate mental health service costs accurately if mental health care was not included as part of the benefit package.

In the report, we address the following questions:

- What proportion of privately insured children with special health care needs have emotional and behavioral disorders, and how does this vary across time and demographic characteristics of children?
- How do the total and service-specific per member per month (PMPM) costs of care for children with behavioral or emotional disorders compare with children in the sample?

- What proportion of the PMPM costs were paid by subscribers through copayments and deductibles? Did this change over time?
- What types of physicians prescribe psychiatric medications for children with emotional and behavioral disorders and what kinds of medications do they prescribe?

In Chapter II of the report, we describe the methods used to identify the sample of children with special health care needs and the subgroup of these children who have behavioral or emotional disorders. Chapter III includes the results of our analyses on costs of mental health services and psychiatric medications. In Chapter IV, we discuss the implications of these findings for the MCHB, health plans, and families.

This report is one in a series of reports that uses data from 1999–2001 to describe patterns of health care use and cost among privately insured children with special health care needs. Other reports examine the use and cost of prescription drugs for these children (Ireys et al. 2003) and trends in subscriber costs (Nyman et al. 2003). A prior report, published in 2002 (Ireys et al. 2002), describes the development of the database used in these studies.

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II. METHODS

A. DATA SOURCES

The database for this project was constructed using the following files maintained by the CHCPE:

- *An enrollment file*, which contains demographic information—including gender and date of birth—on all health plan members and dependents, along with such other information as unique member identifier, enrollment date, disenrollment date, and information about the plans in which the member is enrolled.
- *A pharmacy claims file*, which contains information from claims submitted directly and electronically by retail pharmacies, including all outpatient prescription drugs that exceed the cost of the member's copayment amount. Copayment amounts are determined by the member's prescription drug benefit plan and whether the product dispensed is included in the list of preferred drugs. Non-preferred products require higher copayments. Included in the pharmacy claims file are the member's unique identifier, pharmacy identifier, prescriber identifier, date dispensed, billing and payment information, copayment amount, and information specific to the drug prescribed (the National Drug Code (NDC), drug strength, quantity and days supply).
- *A physician claims file*, which contains information submitted by physicians using the HCFA 1500 claim protocol, including descriptions of all services performed for which they are reimbursed, a unique member identifier, a unique provider identifier (indicating specialty), up to four ICD-9-CM diagnosis codes, the place of service, billing information, and the insurance product under which the service falls.
- *A facility claims file*, which contains information submitted by health care facilities (such as hospitals and nursing homes) using the UB92 claim protocol, including a unique member identifier, unique facility identifier, facility type, revenue codes, services performed, up to nine ICD-9-CM diagnosis codes, the place of service, billing information, and the insurance product under which the service falls.

Each child's record was built from these administrative and claims files using common identifiers. The process of creating the database for this project included quality-control checks to ensure that no records were missed and that records for each child were appropriately linked.

Records for each child in the sample contained information on demographic characteristics (i.e., age, gender, ZIP code, and county code), primary and secondary diagnosis codes, CPT-4 and ICD-9 procedure codes, encounter data (including date of service, provider specialty, and site codes), and payment data as reported by providers, clinics, and hospitals using standard claim forms.

B. IDENTIFYING THE SPECIFIC HEALTH PLANS

Our goal was to generate a sample size of at least 25,000 children with special health care needs. This sample size permits highly reliable estimates of rates of service utilization and costs for the sample as a whole and for major subgroups. In light of previous studies (e.g., Neff et al. 2001), we expected that an identification method based on administrative and claims data would identify about 10 percent of children as having a special health care need. Therefore, to generate this sample, the total population of children in selected plans had to be about 250,000. Because children typically constitute one-quarter of the members of a commercial health plan, the selected plans had to have a combined membership of 1 million people.

To meet these requirements, CHCPE identified two plans, one from a Midwestern state and the other from a Southern state. Both were independent practice association (IPA), open-access plans, and include small, medium, and large employers. Children in these plans had similar benefit packages that included inpatient, preventive care, ancillary (laboratory and radiology), and other outpatient services. Home health and therapeutic visits were also covered with limits on the total amount. Copayments and deductibles varied according to employer group, but were typically in the \$10-\$20 range for office visits, \$50-\$100 for emergency department services, and \$250-\$500 for inpatient admissions. Total membership in these plans was about 1 million individuals in each of the study years.

C. USING THE CRG SYSTEM TO IDENTIFY THE SAMPLE

We used the clinical risk group (CRG) system (version 1) to identify children with special health care needs. The CRG system uses diagnostic and procedure codes found in claims records to assign each individual to a single, mutually exclusive, severity-adjusted category based on clinical history, age, and gender. There are 1,025 such categories.

In addition, the CRG system assigns individuals to one of nine health status groups (Table II.1) based on the individual's most significant diagnosis or diagnoses. We operationally defined children with special health care needs as children who were assigned to health status groups 3 to 9. This approach approximates as closely as possible MCHB's general definition of the population, excluding the at-risk component (McPherson et al. 1998).³ As recommended by the CRG developers, we excluded children with less than six months of enrollment, newborns with less than three months of enrollment, and children living in residential institutions for any part of the year. Children are defined as plan members who were younger than 19 at the end of each study year.

We also excluded children with special health care needs who lacked a comprehensive benefit package that included pharmacy and mental health coverage. We excluded these children because we would not have been able to calculate mental health and pharmacy costs, including inpatient mental health stays, visits to a mental health provider, or psychiatric medications.

³Additional details regarding the CRG system and the rationale for using it to identify children with special health care needs are available on 3M's Website (www.3mhis.com/us/products/), in publications from other investigative teams (Madden et al. 2001; Neff et al. 2001, 2002; Shenkman et al. 2001), and in prior reports from this project (Ireys et al. 2002).

TABLE II.1
HEALTH STATUS CATEGORIES IN THE CRG SYSTEM

Category	Description
1. Healthy	Individuals who do not use services.
2. Significant Acute	Individuals with conditions that place an individual at risk for developing a chronic condition.
3. Single Minor Chronic	Individuals with conditions that can generally be managed throughout an individual's life with few complications.
4. Multiple Minor Chronic	Individuals with minor chronic conditions in two or more body systems.
5. Single Dominant or Moderate Chronic	Individuals with serious medical conditions that often result in progressive deterioration of health and that contribute to debility, death, and a future need for medical services (Single Dominant) or individuals with conditions that are not progressive, are highly variable, and that can contribute to debility, death and a future need for medical services (Moderate Chronic).
6. Significant Chronic Pair	Individuals with dominant or moderate chronic conditions in two organ systems.
7. Chronic Triplet	Individuals with dominant or moderate chronic conditions in three or more organ systems.
8. Dominant, Metastatic, or Complicated Malignancies	Individuals with malignancies that have a difficult progression (for example, brain tumors) or that are fundamentally systemic (for example, leukemia).
9. Catastrophic Conditions	Individuals with conditions that are expected to be lifelong, that are often progressive, and that require extensive services.

NOTE: Adapted from Neff et al. 2002.

D. IDENTIFYING CHILDREN WITH EMOTIONAL AND BEHAVIORAL DISORDERS

Prior to categorizing children into one of the nine health status groups, the CRG system assigns children to major diagnostic categories (MDCs) based on available diagnosis codes reported in claims records. One of these MDCs (MDC 191) includes children with psychiatric diagnoses, as shown in Table II.2. For this study, we defined children who have emotional and behavioral disorders as children who were assigned to MDC 191.⁴

E. PHARMACEUTICAL CLASSIFICATIONS

In order to describe pharmaceutical use by children with special health care needs who have an emotional or behavioral disorder, we examined psychiatric medications frequently used for treatment of the diagnoses included in MDC 191. Medications were sorted into the following six categories: antidepressants, antipsychotics, stimulants, anxiolytics, hypnotics, and anticonvulsants. The medications included in these categories (see Appendix B for the specific medications in each category) were selected based on previous experience, and are designed to reflect frequently-used psychiatric medications, rather than an exhaustive list. Hypnotics are included on the list because sleep disorders (e.g., insomnia) are included in MDC 191. Medications considered to be experimental were excluded.

⁴We considered but rejected two other methods for identifying this subgroup of children. The first involved identifying children who had been prescribed psychiatric medications; the second involved identifying children who had visited mental health professionals. These methods did not add substantial numbers of children to the group already identified by MDC 191 and could have added “false positives” (children who were identified as having an emotional or behavioral disorder but in fact did not). Further information on why we elected to use only MDC 191 for the identification method can be found in Appendix A.

TABLE II.2

PSYCHIATRIC DISORDERS INCLUDED IN MDC 191

Acute adjustment, neurotic, and psychogenic disorders
Attention deficit hyperactivity disorder
Anxiety disorders
Bi-polar disorders
Child maltreatment/abuse syndrome
Conduct, impulse control, other disruptive behavior disorders
Depressive disorders, depressive psychoses, and suicide attempts
Eating disorders
Major personality disorders
Phobic disorders
Post traumatic stress disorder
Psychoses
Schizophrenia
Sleep disorders
Other chronic disorders

NOTE: “Other chronic disorders” include diagnoses that are rarely seen in children, such as acute delirium, depersonalization syndrome, organic personality syndrome, and neurotic disorder not otherwise specified. The full list of ICD-9 diagnosis codes associated with MDC 191 is available from H. Ireys (hireys@mathematica-mpr.com).

The number of prescriptions in each category was determined by counting the number of unique prescriptions written for a child in a given year, including refills. Prescription practices vary widely among these medications. For example, some medications (e.g., Ritalin) are subject to federal regulations on controlled substances and, as a result, only one month’s worth of pills can be prescribed at a time. Because of this variation, the number of prescriptions is not useful for comparing prescription practices across medications, but can be used to show how, for a given type of medication, prescribing practices differ across physician groups or over time.

F. ANALYTIC METHODS

We constructed our sample by first identifying all enrolled children in each health plan in calendar years 1999, 2000, and 2001. We then combined the two groups of children and removed newborns with less than three months of enrollment and children with less than six months of enrollment in each calendar year. The remaining children were used as the population in which we identified children with special health care needs.

For all analyses involving costs and rates of service use, we adjusted for number of months enrolled for children with less than 12 months of enrollment. We reported costs and service use for the following age groupings: 0 to 5, 6 to 12, and 13 to 18. These age groupings were created to reflect broad developmental stages (infants and toddlers, school-aged children, and adolescents). We did not separate infants from toddlers because we were concerned about potentially small sample sizes. However, examining infants as a separate group would be an important step for future research in order to understand service use and costs related to neonatal conditions and associated stays in neonatal intensive care units.

Costs were defined as payments for services provided or drugs prescribed in the selected calendar year (even if the payment itself was in a subsequent year). Total costs included (1) payments made to providers and (2) copayments and deductibles paid by the subscriber. This breakdown allowed us to estimate subscriber costs for mental health care. We elected to use payments as the measure of costs, rather than billed charges, to be consistent with other studies in the field and because these data reflect actual expenditures. These payments do not include expenses that are not covered by the health plan contract. In all cases, per member per month (PMPM) costs were adjusted for person years.

Because only a very small number of children were assigned to the “significant chronic pair” and “chronic triplet” groups, we combined these two groups in our analyses. This

combined group is referred to as “pairs and triplets.” This decision allowed us to compare our results directly with findings from our earlier report (Ireys et al. 2002) and a previous study (Neff et al. 2002) that reported results with these two groups combined.

The database assembled for this study is one of the largest on costs and service use for children with special health care needs enrolled in commercial managed care plans. However, several limitations are important to keep in mind. Our study does not cover services excluded from benefit packages, and hence some services used by these children and families will not be included in our analyses. In addition, data for this study were drawn from only two commercial managed care plans and our findings may not be generalizable to other plans.

III. RESULTS

We found that 37 percent of our sample of privately insured children with special health care needs had emotional or behavioral disorders. The most common diagnosis was attention deficit/hyperactivity disorder (ADHD). Of children with special health care needs who had emotional or behavioral disorders, nearly 57 percent had a diagnosis of ADHD, 34 percent had ADHD alone and an additional 22 percent had ADHD in conjunction with another chronic condition.

The overall per member per month (PMPM) cost for children with special health care needs who had emotional or behavioral disorders was \$238 in 2001, compared with a PMPM cost of \$383 for other children with special health care needs. For children with emotional and behavioral disorders, medications accounted for the largest proportion (22 percent) of the total PMPM cost, exceeding costs for inpatient care (19 percent of total costs) and mental health visits (11 percent of total costs).

In this chapter, we first present the number of children with special health care needs who were identified as having an emotional or behavioral problem for the sample overall and for selected subgroups. We then examine the costs of their care and how these costs compare to other children with special health care needs. The third section of this chapter discusses the proportion of costs paid by families via copayments and deductibles. The fourth section discusses the types of psychiatric medications prescribed for children with emotional and behavioral disorders and the types of physicians who prescribe these medications.

A. NUMBER AND CHARACTERISTICS OF CHILDREN WITH SPECIAL HEALTH CARE NEEDS IDENTIFIED AS HAVING EMOTIONAL AND BEHAVIORAL DISORDERS

As Table III.1 shows, 37 percent of children with special health care needs enrolled in the two commercial managed care plans were identified as having an emotional or behavioral disorder (10,032 individuals). Similar percentages were found for 1999 and 2000.

TABLE III.1
PERCENTAGE OF CSHCN IDENTIFIED AS
HAVING EMOTIONAL OR BEHAVIORAL DISORDERS, 2001

	All CHSCN	CSHCN with Emotional or Behavioral Disorder	
		Number	Percent
Total	26,949	10,032	37
Age Groups			
0-5	5,726	432	8
6-12	9,937	4,528	46
13-18	11,286	5,072	45
Gender			
Female	11,882	3,804	32
Male	15,067	6,228	41
Health Status Groups			
Single Minor Chronic	11,683	5,441	47
Multiple Minor Chronic	612	356	58
Sing. Dom./Mod. Chronic	12,837	3,580	28
Pairs/Triplets	1,343	575	43
Malignancies	117	25	21
Catastrophic	357	55	15

SOURCE: UnitedHealth Group

The number and percentage of children with emotional or behavioral disorders varied by age and gender. Only 8 percent of children with special health care needs under age six were

identified as having an emotional or behavioral disorder (432 individuals), compared with 46 percent of children ages 6-12 (4,528 individuals) and 45 percent of adolescents ages 13-18 (5,072 individuals). Among boys, 41 percent (6,228 individuals) were identified as having emotional or behavioral disorders, compared with 32 percent of girls (3,804 individuals).

The number and percentage of children identified as having emotional or behavioral disorders also varied by health status group. A total of 5,441 individuals in the single minor chronic condition group (47 percent) and 3,580 individuals (28 percent) in the single dominant/moderate condition group were so identified. Although relatively few children had multiple minor chronic conditions, more than half of them (356 individuals or 58 percent) were identified as having emotional or behavioral disorders.

As Table III.2 shows, the most common diagnosis given to children with special health care needs who had emotional or behavioral disorders was ADHD. Of children with special health care needs who had emotional or behavioral disorders, 34 percent had a diagnosis of ADHD alone. An additional 22 percent had ADHD in conjunction with another chronic condition. Other common emotional or behavioral disorders within this group were depression, acute mental health disorders, and disruptive behavior disorders.

B. COSTS OF CARE

As Table III.3 shows, overall costs for most services for children with special health care needs who also have emotional and behavioral disorders were 38 percent lower than costs for other children with special health care needs (PMPM costs of \$237.71 compared with \$382.89). The exceptions to this pattern involved mental health services and prescription drugs.⁵ In 2001, PMPM costs for mental health services and medications were \$26.42 and \$51.36, respectively,

⁵This figure includes all prescription drug costs, not just costs for psychiatric medications.

for children with emotional and behavioral disorders. Costs for these services were \$.55 and \$40.12, respectively, for all other children with special health care needs. Together, mental health and prescription drug costs were about one-third of the total costs of services for children with emotional and behavioral disorders but only about 11 percent of total service costs for other children. These figures underscore the importance of access to mental health and prescription drug coverage for families of children with special health care needs who have emotional and behavioral disorders.

TABLE III.2

MOST COMMON DIAGNOSES FOR CHILDREN WITH SPECIAL HEALTH CARE NEEDS WHO HAD AN EMOTIONAL OR BEHAVIORAL DISORDER, 2001

Rank	Diagnosis	Members with This Diagnosis		Members with Only This Diagnosis	
		Number	Percent	Number	Percent
1	Attention Deficit/Hyperactivity Disorder	5,676	56.6	3,422	34.1
2	Depression	2,474	24.7	701	7.0
3	Acute Mental Health Disorders including Adjustment, Neurotic, and Psychogenic-Minor	2,501	24.9	588	5.9
4	Depressive and Other Psychoses—Conduct, Impulse Control, and Other	1,288	12.8	245	2.4
5	Disruptive Behavior Disorders	1,506	15.0	268	2.7
6	Bi-Polar Disorders	544	5.4	51	.5
7	Acute Stress and Anxiety Disorders	1,056	10.5	235	2.3

SOURCE: UnitedHealth Group

NOTE: Total number of children is 10,032.

Total PMPM costs for services to children with special health care needs who had an emotional or behavioral disorder increased 17.9 percent between 1999 and 2001, compared with an increase of 15.9 percent for other children in the sample (Table III.4). Compared with other children, children with emotional or behavioral disorders had greater increases in outpatient and

emergency services. In particular, costs for emergency services for these children increased 50.8 percent in this two-year period, compared with an increase of 26.8 percent for other children with special health care needs. Inpatient costs, however, decreased 7.5 percent for children with emotional or behavioral disorders (while increasing slightly for the other children). Further research would be needed to determine whether the increase in costs for emergency services for children with special health care needs who had emotional and behavioral disorders was related to the decrease in costs for their inpatient care.

TABLE III.3

PER MEMBER PER MONTH COSTS FOR CSHCN WITH AND WITHOUT AN EMOTIONAL OR BEHAVIORAL DISORDER, BY SELECTED SERVICE CATEGORIES, 2001

	With Emotional or Behavioral Disorder		Without Emotional or Behavioral Disorder	
Members	10,032		16,917	
Total PMPM Cost	\$237.71		\$382.89	
	PMPM Costs (In Dollars)	Percent	PMPM Costs (In Dollars)	Percent
Mental Health	26.42	11.1	0.55	.1
Prescription Drugs	51.36	21.6	40.12	10.5
Inpatient	44.59	18.8	118.88	31.0
Outpatient	20.19	8.5	45.39	11.9
Primary Care Providers	21.74	9.1	33.57	8.8
Specialist	17.54	7.4	44.34	11.6
Other Providers	2.19	.9	4.32	1.1
Emergency	15.83	6.7	18.71	4.9
OT/PT/ST	1.10	.5	2.50	.7
Lab	11.95	5.0	21.61	5.6
X-ray	17.69	7.4	28.53	7.5
DME	1.64	.7	10.14	2.6
Home Health	5.48	2.3	14.22	3.7

SOURCE: UnitedHealth Group

TABLE III.4

PER MEMBER PER MONTH COSTS FOR CSHCN WITH AND WITHOUT
AN EMOTIONAL OR BEHAVIORAL DISORDER BY SELECTED SERVICE CATEGORIES, 1999 AND 2001

	1999		2001			
	CSHCN With An Emotional Or Behavioral Disorder	CSHCN With No Emotional Or Behavioral Disorder	CSHCN With An Emotional Or Behavioral Disorder	% Change ^a	CSHCN With No Emotional Or Behavioral Disorder	% Change ^a
Number of Children	8,548	14,576	10,032		16,917	
Total PMPM Cost	\$201.61	\$330.50	\$237.71	17.9	\$382.89	15.9
Mental Health	\$25.78	\$ 0.69	\$26.42	2.5	\$ 0.55	-20.3
Prescription Drugs	33.88	25.10	51.36	51.6	40.12	59.8
Inpatient	48.20	116.20	44.59	-7.5	118.88	2.3
Outpatient	14.55	36.62	20.19	38.8	45.39	23.9
PCP	18.90	28.59	21.74	15.0	33.57	17.4
Specialist	17.44	42.67	17.54	.6	44.34	3.9
Emergency	10.50	14.76	15.83	50.8	18.71	26.8

SOURCE: UnitedHealth Group

^aPercent change is from 1999

Within the group of children with special health care needs who also had an emotional or behavioral disorder, 2001 PMPM costs for specific services were highest for the children 0 to 5 (Table III.5), but this is likely to result from high service costs related to the relatively few children born with low birth weights, seizure disorders, congenital malformations, or other developmental disabilities. Compared with costs for services provided to school-aged children, costs for services provided to adolescents were higher. Also, PMPM costs were generally higher for girls than for boys, except for prescription drugs; the PMPM cost for prescription drugs was \$53.77 for boys and \$47.43 for girls.

As expected, PMPM costs varied widely across health status groups. Children with two or three chronic conditions (the “pairs and triplets” group) had the highest PMPM cost for mental health services, \$43.06, although this represented only 5 percent of total PMPM costs. The PMPM cost for mental health services also was high for children in the single dominant/moderate chronic condition group, \$36.44, representing 14.7 percent of total PMPM costs. The PMPM cost for mental health services was the lowest (\$18.56) for children in the single minor chronic group (15.6 percent of total PMPM costs). Mental health services and prescriptions together account for nearly 47 percent of PMPM costs for the single minor chronic group. Overall, these figures suggest that certain subgroups of children (e.g., adolescent females with a single dominant chronic condition) are at higher risk for mental health problems than other groups, but further research would be needed to determine the specific diagnostic and demographic characteristics of these subgroups.

TABLE III.5

PER MEMBER PER MONTH COSTS FOR CSHCN WITH EMOTIONAL OR BEHAVIORAL DISORDERS
BY SELECTED SERVICE CATEGORIES AND STANDARD SUBGROUPS, 2001

	Members	Total Dollars	Mental Health	Prescription Drugs	Inpatient	Outpatient	Primary Care Providers	Specialist	Other Services
	10,032	237.71	26.42	51.36	44.59	20.19	21.74	17.54	55.87
Age Group									
0-5	432	450.91	15.97	29.68	134.75	69.19	42.45	34.59	124.28
6-12	4,528	180.68	22.00	46.07	21.81	15.69	21.43	12.83	40.85
13-18	5,072	270.58	31.24	57.89	57.28	20.07	20.28	20.30	63.52
Gender									
Female	3,804	260.56	29.49	47.43	53.93	21.88	23.44	21.77	62.62
Male	6,228	223.72	24.55	53.77	38.87	19.15	20.70	14.95	51.73
Health Status Groups									
Single Minor Chronic	5,441	118.64	18.56	36.96	3.80	8.09	18.86	9.32	23.05
Multiple Minor Chronic	356	264.75	20.25	52.48	24.61	34.36	27.84	36.35	68.86
Single Dom./Mod. Chronic	3,580	248.61	36.44	62.13	41.56	18.83	20.32	17.27	52.06
Pairs/Triples	575	826.77	43.06	108.97	241.92	70.70	41.67	64.03	256.42
Malignancies	25	4,865.78	22.37	110.02	2,241.73	797.67	186.74	210.04	1,297.21
Catastrophic	55	2,620.95	19.54	126.85	1,242.73	298.91	67.34	136.52	729.06

SOURCE UnitedHealth Group

C. MEMBER COSTS

Families of children with special health care needs who had emotional and behavioral disorders paid an average of \$36.48 per month in copayments and deductibles in 2001, which is 12 percent higher than families of all other children, who paid \$32.52 (Table III.6). The distribution of costs across services differs somewhat for the two groups. For example, mental health services and prescription drugs accounted for a larger proportion of the total monthly cost for children with emotional and behavioral disorders than they did for other children (22.2 percent compared with less than one percent for mental health services, and 36.9 percent compared with 30.8 percent for prescription drugs).

TABLE III.6

AVERAGE MONTHLY COSTS PAID BY MEMBERS FOR SELECTED SERVICES
TO CSHCN WITH AND WITHOUT AN EMOTIONAL OR BEHAVIORAL DISORDER, 2001

	With Emotional or Behavioral Disorder		Without Emotional or Behavioral Disorder	
	Average Monthly Costs	Percent of Total	Average Monthly Costs	Percent of Total
Members	10,032		16,917	
Average Monthly Cost to Members	\$36.48		\$32.52	
Mental Health	8.11	22.2	.19	.6
Prescription Drugs	13.45	36.9	10.01	30.8
Inpatient	2.91	8.0	2.44	7.5
Outpatient	1.38	3.8	2.87	8.8
Primary Care Provider	4.24	11.6	5.56	17.1
Specialist	1.80	4.9	3.49	10.7
Other Providers	.39	1.1	.68	2.1
Emergency	1.63	4.5	2.06	6.3
OT/PT/ST	.23	.6	.57	1.8
Lab	.80	2.2	.93	2.9
X-ray	1.15	3.2	1.88	5.8
DME	.32	.9	1.74	5.4
Home Health	.07	.2	.11	.3

SOURCE : UnitedHealth Group

Variation in member payments by age, gender, and health status groups is extensive and similar to findings noted in the previous section (Table III.7). In absolute dollars, families of adolescents tend to have higher average monthly copayments and deductibles compared with families of school-aged children. Families of girls have higher payments than families of boys for all services listed in Table III.7, except for prescription drugs. And families of children with serious and complex conditions pay substantially more than families of children with minor chronic conditions.

Member payments represent only a percentage of total payments. Overall, families of children with special health care needs who have emotional or behavioral disorders pay 15 percent of total costs but this percentage varies widely across services and age, gender, and health status groups (Table III.8). Generally, families of children with multiple or complex conditions pay a lower percentage of total costs than families of children with single or minor conditions. For example, member payments for specialty services for children in the pairs and triplets, malignancies, and catastrophic groups are less than 7 percent, where as member payments are 11 to 13 percent for children in the other groups. Mental health care is an exception to this general finding; for this service, member payments as a percentage of the total costs are fairly consistent across the health status groups, with most of them falling in the 30 to 33 percent range.

Overall, the average monthly amount paid by families of children with special needs who had emotional or behavioral disorders increased 35.4 percent between 1999 and 2001, from \$26.94 to \$36.48 (Table III.9). In comparison, the amount paid by families of other children with special health care needs increased 40.1 percent, from \$23.21 to \$32.52. Although the increase was somewhat lower for children with emotional or behavioral disorders, the total

TABLE III.7

AVERAGE MONTHLY COSTS PAID BY MEMBERS FOR SELECTED SERVICES TO CSHCN
WITH EMOTIONAL OR BEHAVIORAL DISORDERS, BY MAJOR SUBGROUPS, 2001

	Members	Total Monthly Payments	Mental Health Visits	Prescription Drugs	Inpatient	Outpatient	Primary Care Provider	Specialist
All CHSCN	10,032	36.47	8.11	13.45	2.91	1.38	4.24	1.80
Age Group								
0-5	432	37.99	5.77	9.37	1.73	3.78	7.15	2.26
6-12	4,528	32.15	7.10	13.34	1.21	1.08	4.44	1.50
13-18	5,072	40.21	9.20	13.90	4.53	1.45	3.82	2.03
Gender								
Female	3,804	38.52	8.87	12.86	3.35	1.45	4.55	2.09
Male	6,228	35.22	7.64	13.81	2.65	1.34	4.05	1.62
Health Status Groups								
Single Minor Chronic	5,441	26.54	6.15	11.30	0.32	0.73	4.05	1.24
Multiple Minor Chronic	356	40.71	6.01	14.88	1.25	2.51	5.45	4.10
Single Dom. /Mod. Chronic	3,580	43.91	10.93	14.76	5.22	1.75	4.01	1.99
Pairs/Triples	575	72.06	10.73	23.42	11.67	3.34	6.09	3.99
Malignancies	25	98.52	4.29	19.65	34.85	16.24	8.19	2.78
Catastrophic	55	99.86	5.96	22.85	11.71	7.31	7.96	5.89

SOURCE: UnitedHealth Group

TABLE III.8

AVERAGE MONTHLY PAYMENTS BY MEMBERS AS PERCENT
OF TOTAL PAYMENTS FOR SELECTED SERVICES, 2001

	Members	Total Monthly Payments	Mental Health Visits	Prescription Drugs	Inpatient	Outpatient	Primary Care Provider	Specialist
All CHSCN	10,032	15	31	26	7	7	20	10
Age Group								
0-5	432	8	36	32	1	5	17	7
6-12	4,528	18	32	29	6	7	21	12
13-18	5,072	15	29	24	8	7	19	10
Gender								
Female	3,804	15	30	27	6	7	19	10
Male	6,228	16	31	26	7	7	20	11
Health Status Groups								
Single Minor Chronic	5,441	22	33	31	8	9	21	13
Multiple Minor Chronic	356	15	30	28	5	7	20	11
Single Dom. /Mod. Chronic	3,580	18	30	24	13	9	20	11
Pairs/Triples	575	9	25	21	5	5	15	6
Malignancies	25	2	19	18	2	2	4	1
Catastrophic	55	4	30	18	1	2	12	4

SOURCE: UnitedHealth Group

TABLE III.9

AVERAGE MONTHLY COSTS PAID BY MEMBERS FOR SELECTED SERVICES PROVIDED TO CSHCN WITH AND WITHOUT AN EMOTIONAL OR BEHAVIORAL DISORDER, 1999 AND 2001

	1999		2001			
	CSHCN With An Emotional Or Behavioral Disorder	CSHCN With No Emotional Or Behavioral Disorder	CSHCN With An Emotional Or Behavioral Disorder	% Change ^a	CSHCN With No Emotional Or Behavioral Disorder	% Change ^a
Number of Children	8,548	14,576	10,032		16,917	
Total PMPM Cost	\$26.94	\$23.21	\$36.48	35.4	\$32.52	40.1
Mental Health	\$7.15	\$.24	\$ 8.11	13.4	\$.19	-20.8
Prescription Drugs	7.95	6.35	13.45	69.2	10.01	57.6
Inpatient	2.78	1.83	2.91	4.7	2.44	33.3
Outpatient	1.05	1.89	1.38	31.4	2.87	51.9
Primary Care Provider	3.58	4.72	4.24	18.4	5.56	17.8
Specialist	1.35	2.68	1.80	33.3	3.49	30.2
Emergency	1.07	1.56	1.63	52.3	2.06	32.1

SOURCE: UnitedHealth Group

^aPercent change is from 1999.

amount was still higher in 2001 compared with the total amount paid by other children. Much of the increase in member costs for children with emotional or behavioral disorders was driven by increases in costs for prescription drugs and emergency services, which rose by 69.2 percent and 52.3 percent, respectively.

D. PSYCHIATRIC MEDICATIONS: USE AND COSTS

As Table III.10 shows, in 2001, the most common drugs prescribed to children with special health care needs who had emotional or behavioral disorders were stimulants (prescribed for 48 percent of the children in this group) and anti-depressants (prescribed for 28 percent of the

TABLE III.10

NUMBER AND PERCENT OF CSHCN WITH EMOTIONAL AND BEHAVIORAL DISORDERS
RECEIVING SELECTED PSYCHIATRIC DRUGS BY AGE, GENDER, AND HEALTH STATUS, 2001

	Total Children	Anti-depressants		Anti-Psychotics		Stimulants		Anxiolytics		Sedatives		Selected Anticonvulsants	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
CHSCN with Emotional or Behavioral Disorders	10,032	2824	28	722	7	4,804	48	309	3	92	1	607	6
Age Group													
0-5	432	18	4	16	4	120	28	6	1	5	1	14	3
6-12	4,528	773	17	276	6	2,892	64	82	2	15	<1	205	5
13-18	5,072	2,033	40	430	8	1,792	35	221	4	72	1	388	8
Gender													
Female	3,804	1,345	35	212	6	1,250	33	146	4	52	1	218	6
Male	6,228	1,479	24	510	8	3,554	57	163	3	40	1	389	6
Health Status Groups													
Single Minor Chronic	5,441	1,098	20	146	3	3,285	60	101	2	29	1	81	1
Mult Minor Chronic	356	120	34	8	2	184	52	9	3	2	1	10	3
Single Dom/Mod	3,580	1,351	38	455	13	1,122	31	142	4	46	1	402	11
Pairs/Triples	575	242	42	109	19	191	33	49	9	13	2	106	18
Malignancies	25	2	8	1	4	7	28	4	16	1	4	1	4
Catastrophic	55	11	20	3	5	15	27	4	7	1	2	7	13

SOURCE: UnitedHealth Group

NOTE: Percentages do not add to 100 because some children did not receive any of these prescription drugs; in addition, some children received more than one type.

children).⁶ Prescriptions for anti-depressants increased with each age group; remarkably, 40 percent of all adolescents in the sample were given a prescription for anti-depressants. Anti-depressants were given to females more than males and to children in certain health status groups (pairs/triplets, single dominant/moderate, and multiple minor groups) compared with others (single minor, catastrophic, and malignancies). As expected, more males than females received prescriptions for stimulants (e.g., Ritalin). Over half of the children in the single minor and multiple minor groups were given stimulants, reflecting the high percentage of children with ADHD in these groups.

Psychiatrists and pediatricians were the physicians most likely to prescribe medications for children and adolescents with emotional or behavioral disorders (Table III.11).⁷ Overall, of the 45,306 prescriptions written for these individuals, 34.9 percent were written by psychiatrists and 31.7 percent, by pediatricians. Other primary care providers wrote 20.6 percent of the prescriptions, while neurologists and other physician specialists wrote 12.8 percent. Table III.11 illustrates other noteworthy patterns in prescribing behavior:

- In 2001, 19,883 prescriptions were written for 2,898 children (6.9 per child) and 10,870 prescriptions were written for 1,794 adolescents (6.1 per adolescent).

⁶Our analysis of psychiatric medication utilization counts each prescription once, including refills. However, some stimulant medications are controlled substances, and instead of refills, physicians must issue a new prescription each time. Thus, absolute counts reflect prescribing protocols, which differ by medication.

⁷We did not examine the prescribing patterns for infants and young children because few individuals in this group received psychiatric medications.

TABLE III.11

NUMBER OF PSYCHIATRIC PRESCRIPTIONS FOR CSHCN
WITH EMOTIONAL OR BEHAVIORAL DISORDERS, BY PRESCRIBING PROVIDER AND TWO AGE GROUPS, 2001

	By Specialty of Prescribing Provider									
	Children	Prescriptions	Psychiatrist		Pediatrician		Other Primary Care Providers		Neurologists and Other Specialists	
			Number	Number	Percent	Number	Percent	Number	Percent	Number
Total	9,142	45,306	15,797	34.9	14,362	31.7	9,344	20.6	5,803	12.8
Age 6-12										
Anti-depressants	768	2,690	1,511	56.2	422	15.7	310	11.5	447	16.6
Anti-psychotics	276	999	714	71.5	55	5.5	44	4.4	186	18.6
Stimulants	2,898	19,883	4,097	20.6	9,086	45.7	4,635	23.3	2,065	10.4
Anxiolytics	80	139	43	30.9	29	20.9	19	13.7	48	34.5
Sedatives	15	21	7	33.3	2	9.5	4	19.1	8	38.1
Selected Anticonvulsants	204	676	352	52.1	63	9.3	34	5.0	227	33.6
Total	4,241	24,408	6,724	27.6	9,657	39.6	5,046	20.7	2,981	12.2
Age 13-18										
Anti-depressants	2,012	6,739	3,630	53.9	659	9.8	1,517	22.5	933	13.8
Anti-psychotics	426	1,591	1,187	74.6	33	2.1	88	5.5	283	17.8
Stimulants	1,794	10,870	3,239	29.8	3,889	35.8	2,504	23.0	1,238	11.4
Anxiolytics	218	451	206	45.7	40	8.9	108	24.0	97	21.5
Sedatives	71	109	56	51.4	6	5.5	19	17.4	28	25.7
Selected Anticonvulsants	380	1,138	755	66.3	78	6.9	62	5.5	243	21.4
Total	4,901	20,898	9,073	43.4	4,705	22.5	4,298	20.6	2,822	13.5

SOURCE: UnitedHealth Group

NOTE: This table includes only children with special health care needs with emotional and behavioral disorders who have pharmacy claims and who are older than six. Children less than five years of age were excluded because they receive very few prescriptions for psychiatric drugs. Stimulants include medications prescribed for children with ADHD. Other primary care providers include family practitioners and internists.

- Children are more likely to receive prescriptions for psychiatric drugs from pediatricians, while adolescents are more likely to receive them from psychiatrists. Pediatricians wrote 39.6 percent of the prescriptions for psychiatric medications for children and 22.5 percent of these prescriptions for adolescents; psychiatrists wrote 27.6 of these prescriptions for children and 43.4 percent of them for adolescents.
- Pediatricians are more likely than psychiatrists to write prescriptions for stimulants. Pediatricians wrote 45.7 percent of the prescriptions for stimulants for children and 35.8 percent for adolescents; in contrast, psychiatrists wrote 20.6 of the prescriptions for stimulants for children and 29.8 percent for adolescents.

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IV. SUMMARY, IMPLICATIONS, AND NEXT STEPS

The term “children with special health care needs” provides a conceptual umbrella that has been used fruitfully for both policy and research purposes to describe a diagnostically heterogeneous group of children with serious ongoing chronic conditions (see Shenkman et al. 2004). Within this group of children, some individuals have an emotional and behavioral disorder (such as ADHD) as their primary condition; for others, the emotional disorder (for example, an anxiety disorder) is secondary to an ongoing physical health condition such as cancer or muscular dystrophy. Although a few studies have examined mental health issues within the population of children with special health care needs (see, for example, Witt, Kasper, and Riley 2003), little is known about patterns of mental health service use and cost for these children, especially for those enrolled in commercial managed care plans. In particular, very few studies have used administrative and cost data to examine mental health service use within this group. Studies of policy issues affecting child and adolescent mental health services generally underscore the wide gap between the need for mental health care and its availability (e.g., Glied and Cuellar 2003; U.S. Department of Health and Human Services 1999).

As health care quality improvement becomes an increasingly important focus of research and program development, commercial MCOs have turned their attention to analyzing how care is managed for members who are vulnerable to medical errors or poor service coordination because they use health care services at rates higher than typical members. Children with special health care needs who have emotional or behavioral disorders are at risk for poor quality of care because they may have multiple providers (i.e., pediatricians, psychiatrists, other mental health professionals, and possibly medical specialists), require psychiatric medications over a long period of time or in combination with other types of medications, and must contend with the

biological changes associated with normal growth and development. To develop appropriate quality improvement initiatives for this group of children, MCOs need a strong foundation of knowledge about the service use and cost patterns of these children. Our findings can help build this foundation.

A. SUMMARY OF KEY FINDINGS

Using MDC 191, we identified 37 percent of children with special health care needs as having an emotional or behavioral condition in 2001 (10,032 children). Similar percentages of children were identified in 1999 (37 percent) and 2000 (38 percent).

The most common diagnosis among children with special health care needs who had emotional or behavioral problems was attention deficit/hyperactivity disorder (ADHD). Of children with special health care needs who had emotional or behavioral disorders, 34 percent had a diagnosis of ADHD alone and an additional 22 percent had ADHD in conjunction with another chronic condition. Other major findings are noted below.

1. Per Member Per Month Costs

- In 2001, PMPM costs for medications were 28 percent higher for children with special health care needs who had emotional and behavioral disorders compared with all other children who had special health care needs (\$51.36 versus \$40.12).
- Between 1999 and 2001, total PMPM costs for services to children with special health care needs who had an emotional or behavioral disorder increased slightly faster than for other children in the sample (17.9 percent compared with 15.9 percent).
- Inpatient costs for children with emotional and behavioral disorders decreased by 7.5 percent from 1999 to 2001, but costs for emergency services increased by 50.8 percent. For other children in the sample, inpatient costs increased by 2.3 percent and emergency services increased by 26.8 percent during the same period.

2. Costs to Enrolled Members

- Families of children with special health care needs who had emotional and behavioral disorders paid more in copayments and deductibles than families of other children in

the sample, paying an average of \$36.48 per month in 2001; in comparison, families of all other children in the sample paid 10.9 percent less (\$32.52 per month).

- Overall, the average monthly amount paid by families of children with special needs who had emotional or behavioral disorders increased 35.4 percent between 1999 and 2001, driven largely by increases in costs for prescription drugs and emergency services, which rose by 69.2 percent and 52.3 percent, respectively.

3. Prescription Drugs

- The most common drugs prescribed to children with special health care needs who had emotional or behavioral disorders were stimulants (prescribed for 48 percent of the children in this group) and anti-depressants (prescribed for 28 percent of the children).
- Overall, psychiatrists were somewhat more likely than pediatricians to write prescriptions for children with special needs who also had emotional and behavioral disorders (including anti-depressants, stimulants, and anti-psychotics). In 2001, of the 45,306 prescriptions given to children over 5 years of age, psychiatrists wrote 34.9 percent and pediatricians wrote 31.7 percent.
- Prescribing patterns varied by drug and age. For example, pediatricians wrote 45.7 percent of the prescriptions for stimulants for children and 35.8 percent for adolescents; psychiatrists wrote 20.6 of the prescriptions for stimulants for children and 29.8 percent for adolescents.

B. DATA LIMITATIONS

Several data limitations should be kept in mind when interpreting these results. First, the list of diagnoses included in MDC 191 does not include certain conditions that are sometimes classified as an emotional or behavioral disorder, such as autism, Down syndrome, mental retardation, and substance abuse. These diagnoses are included in other MDCs. Rather than creating a new category that combined several MDCs, we elected to use only MDC 191 because all of the associated diagnoses fit within a broad definition of emotional or behavioral disorders. However, our findings must be understood as pertaining only to children with these disorders and not all possible psychiatric conditions.

A second limitation involves the fact that administrative and claims data reflect costs incurred as part of the health plan contract, i.e. costs paid by the plan together with copayments

and deductibles paid by the member. It does not include costs borne by families that are not part of the health plan contract (e.g., mental health visits to providers not covered under the plan or non-covered medications). Hence, the costs reported in this study are likely to be undercounting true total costs of care for these children. In particular, our findings on the costs paid by member are almost certain to be less than the total family out-of-pocket costs because of other services not covered by the plan.

C. IMPLICATIONS

Our findings have several implications for families of this group of children, managed care plans, and the MCHB. Specifically, they suggest that parents of children with special health care needs who have emotional or behavioral disorders will be paying for a substantial portion of the costs of the services that their children use frequently (mental health services and prescription drugs). The findings also suggest that families of adolescents in this group are somewhat more likely to receive prescriptions for psychiatric medications of all kinds from psychiatrists rather than pediatricians; for families of school-aged children, the pattern is reversed.

Our findings indicate that a major proportion of children with special health care needs who have emotional or behavioral disorders are diagnosed with ADHD. Furthermore, these children are given prescriptions for stimulants at very high rates, from both pediatricians and psychiatrists. There is likely to be substantial variation within and across these two physician groups and understanding this variation and its association with health outcomes would be a reasonable next step. However, focusing additional research on just children who have been diagnosed as ADHD may mean that other important issues are overlooked. For example, inpatient costs for children with special health care needs who have emotional or behavioral disorders have decreased considerably more than inpatient costs for other children with special

health care needs while costs for emergency services have increased. Further examination of this pattern could shed light on the relationship between inpatient admissions and visits to emergency departments and could lead to identifying children who are at high risk for poor outcomes.

The MCHB is playing a major role in monitoring progress toward achieving relevant national policy goals within the New Freedom Initiative, including seeking to assure that children with special health care needs have access to adequate, affordable health insurance. Findings from this study underscore the importance of providing national leadership in (a) defining adequate benefit packages as including appropriate and sufficient levels of mental health care and (b) encouraging coverage of mental health services that is comparable to coverage of traditional medical or surgical services. Children with special health care needs who have emotional and behavioral disorders and their families stand to benefit substantially from MCHB's leadership in this area.

D. NEXT STEPS

This study has provided descriptive data on the use and costs of services provided to children with special health care needs who have emotional or behavioral disorders. Descriptive information can help build a useful foundation of knowledge, but this alone will not lead to enhanced quality of care. Further analyses are needed using longitudinal databases to determine which children are at greatest risk over time for poor outcomes, a task that will require further “drill downs” to identify typical service pathways or outcomes of critical episodes of care. These analyses will be most fruitful if they are part of an effort to identify opportunities for targeted quality improvement initiatives. Hence, one of the most important next steps will be to encourage managed care plans to pursue such initiatives in relation to this population of children. The MCHB can play a key role in this effort by working in partnership with MCOs to bring

medical directors and directors of quality management programs together in an effort to develop specific quality improvement projects.

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APPENDIX A

**ALTERNATIVE METHODS FOR IDENTIFYING CSHCN
WITH EMOTIONAL AND BEHAVIORAL DISORDERS**

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In addition to using the MDC 191 to identify children with emotional and behavioral disorders, we considered two additional methods: one involved using pharmaceutical claims, the other involved visits to mental health professionals.

To identify children with a history of psychiatric medications, we searched pharmacy claims data to select children who had received a prescription for medications commonly used to treat mental health conditions, including psychotherapeutic drugs such as antidepressant agents, anti-psychotics, and others. (The list of drugs used is included in Appendix Table A1.) To identify children with a visit to a mental health professional, we searched the claims files for visits to mental health professionals for evaluation or management of an ongoing condition.¹

Based on 2001 data, we identified a total of 10,899 children as having an emotional or behavioral disorder when all three strategies were used (MDC 191 designation, a history of psychiatric medications, and a history of visits to a mental health professional), as shown in Table A.1. The majority of these children (10,032 or 92 percent) were identified using the MDC 191 designation alone. The other two strategies added relatively few children. We were concerned about children identified only through psychiatric medications or only a mental health visit because they are more likely to be “false positives” and may not have true emotional or behavioral disorders. For example, some children with seizure disorders are prescribed psychiatric medications to treat their seizures and some children may visit a mental health professional for minor psychological concerns. As a result, we elected to use only the MDC 191 designation as the method for identifying children with emotional and behavioral disorders.

¹Specifically, the visit had to meet the following three criteria: (1) The site code had to indicate a visit to an office, inpatient, SNF/nursing home, outpatient, free standing surgi-center, or other site; *and* (2) the provider code had to indicate Psychiatrist, Psychologist, Social Worker, or Mental Health Outpatient Facility; *and* (3) the procedure codes had to indicate an evaluation and management visit (CPT codes equal to 99xxx (except 99281-99285 and 99288)).

TABLE A.1

COMPARISON OF THREE METHODS USED TO IDENTIFY CHILDREN WITH
SERIOUS EMOTIONAL AND BEHAVIORAL DISORDERS, 1999-2001

	Total Number Identified by All Methods		MDC 191 Only		Psychiatric Medications Only		Mental Health Visits Only		MDC 191 and Medications		MDC 191 and Visits		Medications and Visits		MDC 191, Medications, and Visits	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
1999	9,334	100	955	10.2	462	4.9	297	3.2	2,545	27.3	2,209	23.7	27	0.3	2,839	30.4
2000	10,756	100	1,032	9.6	534	5.0	297	2.8	2,989	27.8	2,424	22.5	32	0.3	3,448	32.1
2001	10,899	100	1,023	9.4	576	5.3	264	2.4	3,049	28.0	2,307	21.2	27	0.2	3,653	33.5

SOURCE: UnitedHealth Group

APPENDIX B

LIST OF PSYCHIATRIC DRUGS BY CATEGORY

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TABLE B.1

LIST OF PSYCHIATRIC DRUGS USED TO IDENTIFY CSHCN WITH MENTAL ILLNESS

Group	Generic Name
Anti-depressants	Amitrip Hcl/Chlordiazepoxide
	Amitriptyline Hcl/Perphenazine
	Bupropion Hcl
	Maprotiline Hcl
	Mirtazapine
	Trazodone Hcl
	Venlafaxine Hcl
	Citalopram Hydrobromide
	Fluoxetine Hcl
	Paroxetine Hcl
	Sertraline Hcl
	Amitriptyline Hcl
	Amoxapine
	Desipramine Hcl
	Doxepin Hcl
	Imipramine Hcl
	Nortriptyline Hcl
Trimipramine Maleate	
Anti-psychotics	Loxapine Hcl
	Molindone Hcl
	Olanzapine
	Risperidone
	Thiothixene Hcl
	Lithium Carbonate
	Chlorpromazine Hcl
	Fluphenazine Decanoate
	Fluphenazine Hcl
	Mesoridazine Besylate
	Perphenazine
	Promazine Hcl
	Thioridazine Hcl
	Trifluoperazine Hcl
	Haloperidol Decanoate
Haloperidol Lactate	
Stimulants	Amphet Asp/Amphet/D- Amphet
	D-Amphetamine Sulfate
	Methamphetamine Hcl

TABLE B.1 (continued)

Group	Generic Name
Anti-depressants	Amitrip Hcl/Chlordiazepoxide Methylphenidate Hcl Methylphenidate Hcl Methylphenidate Hcl Pemoline
Anxiolytics	Alprazolam Chlordiazepoxide Hcl Clorazepate Dipotassium Diazepam Diazepam/Soybean Oil Lorazepam Midazolam Hcl Oxazepam
Sedatives	Butabarbital Sodium Chloral Hydrate Paraldehyde Pentobarbital Sodium
Selected Anticonvulsants	Carbamazepine Divalproex Sodium Valproate Sodium