INSTITUTE FOR
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CHART BOOK

Identification, Service Use, and Expenditure Profiles of Children with Special Health Care Needs in Medicaid, the State Children's Health Insurance Program and Title V

Identification, Service Use, and Expenditure Profiles of Children with Special Health Care Needs (CSHCN) in Medicaid, the State Children's Health Insurance Program (SCHIP) and Title V

Chart Book

Prepared by

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Introduction

Recent estimates from the 2001 National Survey of Children with Special Health Care Needs (CSHCN) indicate that 12.8% of children in the United States have a special health care need.[1] Previous estimates of the percentages of these children range from 14.8% to 25.2% of the populations studied, depending on the definition of CSHCN used.[2,3,4] One study using health care encounter and survey data from an urban health center identified as many as 36% to 44% of the population as having a chronic condition.[5] Despite differences in how they are identified or in the populations studied, CSHCN are reported to have poorer health status and to use more health care and other services than healthy children, which can translate into higher expenditures for insurers, providers, and families.[6,7] However, very little is known about CSHCN's actual health care expenditures. Information about the children's service use and expenditures can help families, providers, and insurers better plan for the children to ensure they have good access to quality health care.

To ensure good access to care for CSHCN more information is needed about (1) who the population of children with special health care needs are, (2) what their health care use and expenditure patterns are, and (3) how financing and reimbursement systems can best be structured to foster optimal health care for this group of children. Often, however, this information is not available and decisions about programs and program design are made without adequate answers to these important questions. This chart book contains information about the identification of CSHCN and their health care use and expenditures within public health insurance programs (State Children's Health Insurance Program – SCHIP and Medicaid).

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[1] Blumberg, S, Osborn N, Luke, J, et al. 2003. *Estimating the Prevalence of Uninsured Children: An Evaluation of the Data from the National Survey of Children with Special Health Care Needs, 2001*. Centers for Disease Control and Prevention, National Center for Health Statistics.
[2] Stein, R. Siler, E. 1999. Operationalizing a Conceptually Based Noncategorical Definition: A First Look at US children with Chronic Conditions. *Archives of Pediatric and Adolescent Medicine*. 153: 68-74.
[3] Newacheck P, Strickland B, Shonkoff J, et al. 1998. An Epidemiologic Profile of Children with Special Health Care Needs. *Pediatrics*. 102: 117-123.
[4] Bethell CD, Read D, Neff J, Blumberg SJ, Stein REK, Sharp V, Newacheck r. 2002. Comparison of the Children with Special Health Care Needs Screener to the Questionnaire for Identifying Children with Chronic Conditions – Revised. *Journal of Ambulatory Pediatrics*. 2:49-57.
[5] Kuhlthau DA, Beal AC, Ferris TG, Perrin JM. 2002. Comparing a Diagnosis List with A Survey Method to Identify Children with Chronic Conditions in an Urban Health Center. *Journal of Ambulatory Pediatrics*. 2:58-62.
[6] Newacheck P, McManus M, Fox H, Hung Y, Halfon N. 2000. Access to Health Care for Children with Special Health Care Needs. *Pediatrics*. 105:760-766.
[7] Shatin D, Levin R, Ireys H, Haller V. 1998. Health Care Utilization by Children with Chronic Illnesses: A Comparison of Medicaid and Employer-insured Managed Care. *Pediatrics*. 102:e44.

The Chart Book is divided into the following four sections:

(1) Identification: Who are the CSHCN in Medicaid, SCHIP and Title V Programs?
(2) Service Use: What are the Health Care Services Used by the CSHCN in Medicaid SCHIP, and Title V?
(3) Expenditures: What are the Expenditures Associated with Providing Care to CSHCN in Medicaid, SCHIP, and Title V?
(4) How to use these data

The format for the Chart Book includes selected graphs and tables to illustrate each of the content areas. With the presentation of the data, the following key points are summarized, (a) the key findings and conclusion emerging; (2) the importance of this information, and (3) recommendations for further research, if needed. Whenever possible, comparisons between the various public and private insurance programs are provided.

Information about CSHCN with private health insurance coverage and those who are uninsured is not included in this Chart Book.[8] In addition, CSHCN who have not used health care services or use services in non-medical settings, (e.g., receive services in the school setting or through the juvenile justice system) also are not represented. These groups of CSHCN represent a smaller, but equally important, population of children with special needs. Future research will hopefully address the use and expenditure patterns of these children to supplement this work and further our understanding of all children and adolescents with special health care needs.

Purpose

The purposes of the Chart Book are to:

(1) Promote understanding of who CSHCN are, the types of services they use, and the expenses associated with providing that care.
(2) Educate the public, specifically policy makers, about this population of children.
(3) Stimulate discussion among all of the stakeholders about the implications of this information for current health care coverage programs for CSHCN and for new programs that may be designed in the future.

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[8] A companion publication, which includes children with special health care needs who are privately insured and receiving their care in managed care arrangements, will also be released in 2004. This project is the result of collaborations with (1) other health care researchers who also have examined the identification of and health care use patterns of CSHCN within a private health insurance program and (2) family leaders who have provided guidance on the types of data most useful for their work, the type of data presented, and the format for the presentation of the data.

(4) Encourage the use of this information to design optimal health insurance programs that include adequate reimbursement for needed services and comprehensive benefits packages to ensure that the children have access to quality health care that is consistent with their needs.

This Chart Book, as it is currently designed, is intended for all audiences interested in CSHCN, especially key stakeholder groups. These stakeholder groups include state program administrators, health plan administrators, providers, health services researchers, policy makers, and families. The companion publication, presenting data from both private and public health insurance programs, will be specifically targeted to family leaders. This current Chart Book is intended to be dynamic; information will be updated periodically, as new analyses are completed or additional data become available.

Definition of Children with Special Health Care Needs (CSHCN)

A consensus of maternal and child health experts, including the American Academy of Pediatrics (AAP), have endorsed the following definition of children with special health care needs developed and promoted by the Maternal and Child Health Bureau (MCHB), Health Resources and Services Administration (HRSA), Department of Health and Human Services (DHHS).

"those 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."

Although there is no perfect strategy to identify CSHCN, several different tools are available to identify them. Some of these tools require administrative data that are commonly collected by insurance companies. Other tools require survey data that require parental input to help identify a child with special health care needs. Each strategy has advantages and disadvantages and may perform differently depending on the population being examined. The data sources and some of the strategies that rely on these data sources are briefly described below. Additional, detailed information about these strategies, with examples of the tools which have been developed to identify CSHCN, is available upon request from the National Center on Financing for CSHCN at the Institute for Child Health Policy, University of Florida.

Administrative Data:

- ♦ use person-level claims/encounter and enrollment data from public and private health plans
- ♦ children are assigned to different categories based on the severity of the condition and the expected resource use
- ♦ allows for frequent assessment at periodic intervals

- the data are routinely collected and are therefore less expensive to use
- children who do not use the health care system or who have well controlled conditions that are not coded by a provider during a health care visit may be missed

There are several software systems that use International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM) diagnoses codes assigned at the time of a health care visit to group enrollees into condition or health status categories.[9] Each system has a different conceptual framework to determine how the diagnoses are grouped and which diagnoses are included in the classification system. Some currently available systems include:

(1) Clinical Risk Groups (CRGs) – developed by the National Association of Children's Hospitals and Related Institutions (NACHRI) and 3M.[10]
(2) Diagnostic Cost Groups (DxCGs) – developed by DxCG in Boston, MA[11]
(3) Adjusted Clinical Groups (ACGs) – developed by Johns Hopkins University[12]
(4) Chronic Disability Payment System (CDPS) – developed by Rick Kronick and colleagues at the University of California at San Diego.[13]

Survey-based strategies:

- rely on information collected directly from the child's parent, guardian, or the person who knows the child best
- can be administered by telephone, face-to-face, or by mail
- identify children based on parental responses to a series of questions designed to assess presence of a condition, etiology, and length of time that the child has experienced the condition
- can collect information on children who have not used the health care system or do not have a claims history (e.g., new enrollees)
- may be costly and the instruments may not perform equally as well among different sociodemographic groups.[14]

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[9] American Medical Association. 2002. *International Classification of Diseases, 9th Revision, Volumes 1 and 2.* Chicago, Illinois: American Medical Association.
[10] Neff JM, Sharp V, Muldoon J, Graham J, Popalisky J, Gay, J. 2001. Identifying and Classifying Children with Chronic Conditions Using Administrative Data with the Clinical Risk Group Classification System. *Journal of Ambulatory Pediatrics,* 2(1): 72-29.
[11] Ellis, RP, Pope, GC, Iezzoni, LI, Ayanian, JZ, Bates, DW, Burstin, H, and Ash, AJ. 1996. Diagnosis-Based Risk Adjustment for Medicare Capitation Payments. *Health Care Financing Review* 17(3): 101-128.
[12] Weiner, JP, Tucker, AM, Collins, AM, Fakhraei, H, Lieberman, R, Abrams, C, Trapnell, GR, Folkmer, JG. 1998. The Development of A Risk-Adjusted Capitation Payment System for Medicaid MCOs: The Maryland Model. *Journal of Ambulatory Care Management*, Oct; 21(4):29-52.
[13] Kronick, R, Dreyfus T, Lee L, Zhou, Z. 1996. Disability Risk Adjustment for Medicaid: The Disability Payment System. *Health Care Financing Review,* 17(3): 7-33.

The two most popular survey-based strategies for identifying CSHCN include the CSHCN Screener, developed at the Foundation for Accountability (FACCT)[15] and the Questionnaire for Identifying Children with Chronic Conditions (QuICCC and the QuICCC-R (revised))[16] [17] developed at Albert Einstein College of Medicine. Each instrument uses the MCHB non-categorical definition of a child with special health needs as its conceptual framework. Although this Chart Book does not include data for children identified by these three survey-based strategies, future versions of the Chart Book will include additional information about the survey instruments and corresponding data for children identified as CSHCN using the survey instruments.

Data Sources

Enrollment and claims/encounter databases were used to develop the charts and expenditure profiles presented in this Chart Book. These data sources include pediatric enrollees from state public health insurance programs (Title XIX Medicaid and Title XXI SCHIP) in multiple states. In addition, data were obtained from one state Title V CSHCN Program. Although this program is unique and is not intended to be representative of other state Title V programs, it does provide some information about the health care use and expenditures of CSHCN enrolled in a highly specialized system of care specifically designed for these children.[18]

The enrollment files contain information about the child's age, gender, and the number of months enrolled in the program. The claims/encounter databases contain person-level data for inpatient, outpatient, and pharmacy uses; including the date and location of service, the ICD-9-CM[19] codes assigned at the time of the health care encounter, Current Procedure Terminology (CPT) codes, revenue codes, state local codes, and National Drug Codes (NDC). Use patterns were calculated on a per member per month (PMPM) basis. To calculate the PMPM expenditures, the CPT codes were linked to either the state Medicaid fee schedule or, when a

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[14] Shenkman E, Vogel B, Brooks R, Wegener D, Naff R. 2002. Race and Ethnicity and the Identification of Special Needs Children. *Health Care Financing Review*. 23(2):1-17.
[15]Bethell, CD, Read, D, Stein, RE, Blumberg SJ, Wells N, Newacheck PW. 2002. Identifying children with special health care needs: development and evaluation of a short screening instrument. *Journal of Ambulatory Pediatrics,* Jan-Feb;2(1):38-48.
[16] Stein, REK, Westbrook, LE, Bauman, LJ. 1997. The Questionnaire for Identifying Children with Chronic Conditions: a measure based on a noncategorical approach. *Pediatrics,* Apr; 99(4):513-21.
[17] Stein, REK, Silver, EJ, Bauman, LJ. 2001. Shortening the questionnaire for identifying children with chronic conditions: what is the consequence? Pediatrics. Apr; 107(4):E61.
[18] The identity of these states has not been included in this report as anonymity was one of the conditions for the data sharing agreement between the states and the Institute for Child Health Policy.
[19] American Medical Association, 2002. International Classification of Diseases, 9th Revision, Volumes 1 and 2. Chicago, Illinois: American Medical Association.

comprehensive Medicaid fee schedule was not available from the state, the 50% fee obtained from a standardized schedule of physician fees.[20] A per diem of $3,000 was assigned to each day of an inpatient stay and a wholesale price index was used to assign charges to the pharmacy data.

Over a million children are represented by these various data sources: 419,429 in two state Medicaid programs, 720,555 in two state children's health insurance programs (SCHIP), and 72,251 in a state Title V program – a total of 1,212,235 children and adolescents.

How were the Children Identified?

The Clinical Risk Groups (CRGs) was used to identify CSHCN. The CRGs is a categorical clinical system that classifies individuals into mutually exclusive categories.[21] The CRG classification software uses the MCHB definition of a child with special needs as its conceptual framework. The CRGs reads the ICD-9-CM diagnosis codes from all health care encounters, except those associated with providers known to frequently report unreliable codes (e.g., non-clinician and ancillary testing providers). These codes are then assigned to a diagnostic category (acute or chronic) and body system. Procedure codes also are used to more precisely classify the child. Each individual is grouped into a hierarchically defined core health status group, and then to one of nine CRG categories. Multiple severity levels are contained within each CRG category, the number of levels varying by the CRG health status category.

The CRG definition of a chronic health condition contains three components: (a) physical, mental, emotional, behavioral or developmental disorder; (b) expected to last at least 12 months or longer or having sequelae that last at least 12 months or longer; and (c) requires ongoing treatment and/or monitoring. The CRG definition of a significant acute condition is a serious acute illness that places the individual at risk in the future for needing services of an amount and type greater than that for not chronically ill persons, and possibly at risk for an ongoing chronic health condition. In the CRG logic, an acute illness is only classified as a significant acute if it occurred in the most recent six months of the base year time period. Chronic and acute illnesses are generally classified only if there has been at least two outpatient encounters for that diagnosis separated by at least a day. There are a few diagnoses that require only one outpatient encounter based diagnosis, and these include the codes for mental retardation, Down's Syndrome, blindness, and procedural codes such as chemotherapy and renal dialysis.

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[20] Practice Management Information Incorporated. 1998. *Physician Fees*. Los Angeles, California: James B. Davis, Publisher.
[21] Neff, JM, Sharp V, Muldoon J, Graham J, Popalisky J, Gay J. Identifying and Classifying Children with Chronic Conditions Using Administrative Data with the Clinical Risk Group Classification System. *Journal of Ambulatory Pediatrics*. 2(1): 72-79.

The CRG system classifies children into the following nine health status categories.

(1) Healthy: includes children who are enrolled in the program and have not accessed services, "non-users," and children who have used the health care system but did not have a diagnoses indicative of a special need or chronic condition recorded during the time period used for the analysis
(2) Significant Acute: this includes conditions or acute illnesses that could be precursors to or place the person at risk for developing a chronic disease. Examples in this group are head injury with coma, prematurity, and meningitis
(3) Single Minor Chronic
(4) Multiple Minor Chronic
(5) Single Dominant or Moderate Chronic
(6) Pairs – Dominant and Moderate Chronic in Two Organ Systems
(7) Triplets – Dominant and Moderate Chronic in Three or More Organ Systems
(8) Malignancies
(9) Catastrophic Conditions

The six health status groups that are used to define a child with a chronic condition or special health care need are CRG health status categories #3 through #9 and are described more fully below.

Minor Chronic Conditions are those illnesses that can usually be managed effectively throughout an individual's life with typically few complications and limited effect upon the individual's ability, death and future need for medical care. This category includes attention deficit / hyperactive disorders (ADHD), minor eye problems (except near-sightedness and other refractory disorders), hearing loss, migraine headache, some dermatological conditions, and depression.

Moderate Chronic Conditions are those illnesses that are variable in their severity and progression, but can be complicated and require extensive care and sometimes contribute to debility and death. This category includes asthma, epilepsy, and major depressive disorders.

Dominant Chronic Conditions are those illnesses that are serious, and often result in progressive deterioration, debility, death, and the need for more extensive medical care. Examples in this group include diabetes, sickle cell anemia, chronic obstructive lung disease and schizophrenia.

Chronic Pairs and Triplets are those individuals who have multiple primary chronic illnesses in two (Pairs), or three or more body systems (Triplets).

Metastatic Malignancies include acute leukemia under active treatment and other active malignant conditions.

Catastrophic Conditions are those illnesses that are severe, often progressive, and are either associated with long term dependence on medical technology, or are life defining conditions that dominate the medical care required. Examples in this group include cystic fibrosis, spina bifida, muscular dystrophy, respirator dependent pulmonary disease and end stage renal disease on dialysis.

Some of the analyses presented in the chart book collapse these nine health status categories. For certain analyses, the children are categorized as (1) Healthy, (2) Significant Acute, and (3) all Chronic Conditions (CRG categories #3 - #9 above). For this Chart Book, this last group (#3) represents CSHCN. Other analyses use five health status categories to present greater detail about the population of children identified as having special needs. For these analyses, the categories include (1) Healthy, (2) Significant Acute, and (3) CSHCN – Minor Conditions (CRG health status categories #3 and #4), (4) CSHCN – Moderate Conditions, (CRG health status categories #5), and (5) CSHCN – Major Conditions, (CRG health status categories #6, #7, #8, and #9). Finally, a few analyses use all of the health status categories to provide the specific detail across the spectrum of categories. However, because the numbers represented in categories #6 – 9 can be very small, the graphs presenting all nine CRG health status categories have been placed in Appendix A. Readers who want this level of detail are encouraged to examine these graphs.

SECTION 1. Identification

Who are the Children with Special Health Care Needs in Medicaid, SCHIP, and Title V Managed Care?

This section of the Chart Book presents information about the percentage of children identified as CSHCN using the CRGs. The descriptive information includes: (1) the percentage and distribution of CSHCN across the CRG health status categories, (2) the severity of the children's conditions within each of the CRG category, (3) information about selected diagnoses (asthma, ADHD, diabetes, and mental health conditions) for children enrolled in the programs, and (4) information about the stability of the distribution of pediatric enrollees across the CRG categories over time.

The Tables in this section contain detailed information related to the distribution of the children across the CRG health status categories and across the severity levels within each category. Although there are slight variations across the state public health insurance programs, the patterns observed are similar across programs and across states. Therefore, for illustration purposes, we have chosen to present data for one state Medicaid and one SCHIP program. Appendix A includes the tables for severity levels within the CRGs for the other state programs.

Chart 1-1 Who are the CSHCN Identified by the CRGs in Medicaid, SCHIP, and Title V Programs? (Collapsed CRG categories)

Chart 1-2 Who are the CSHCN Identified by the CRGs in Medicaid, SCHIP and Title V Programs? (Expanded CRG categories)

Chart 1-3 What Types of Conditions or Special Health Care Needs Are Identified by the CRGs in Medicaid, SCHIP and Title V Programs? (Only those CRG categories representing CSHCN)

Chart 1-4 What is the Prevalence of Selected Conditions in the Total Pediatric Enrollee Population?, Selected Example from State II Medicaid and SCHIP

Chart 1-5 What is the Prevalence of Selected Conditions Among CSHCN Identified Using the CRGs?, Selected Example from State II Medicaid and SCHIP

Table 1-1 What are the Severity Levels Within the CRGs for Pediatric Enrollees in a Medicaid Program?, State II.

Table 1-2 What are the Severity Levels Within the CRGs for Pediatric Enrollees in a SCHIP Program?, State II.

Table 1-3 What is the Stability of CRG Classifications Over Time? Selected Example from State I. -- 1999 to 2000.

Findings: Striking similarities emerge about the population of CSHCN across these public programs. These similarities include:

(1) The vast majority of children in the Medicaid and SCHIP programs are "healthy." The percentage of children identified as healthy ranged from 80% to 85% of the pediatric enrollees in each of the state public health insurance programs.

(2) Less than 10% of the Medicaid and SCHIP enrollees were identified as having a special health care need. The one exception was the Medicaid Program in State 1, where 13% of the enrollees in this program were identified as CSHCN.

(3) Two of the seven CRG categories used to identify CSHCN capture the majority (about 90 percent) of the population of children considered as CSHCN: Single Minor Chronic Conditions (capture between 30% and 44% of the CSHCN, depending on the state and the program) and Single Dominant/Moderate Chronic Conditions (capture between 49% and 61% of the CSHCN, depending on the state and the program).

(4) Children with rare and serious conditions (malignancies and catastrophic conditions) are a very small percentage of the pediatric enrollees in Medicaid and SCHIP. These children represent approximately 1% of those with special needs and less than 0.2% of the entire pediatric enrollees.

(5) Among the children identified as CSHCN in the Medicaid and SCHIP programs, less than 1% have conditions with severity levels of 3 or higher.

(6) Asthma and Attention Deficit Hyperactivity Disorder (ADHD) are the two most frequently observed diagnoses. There also are significant percentages of children with mental health conditions. Children with diabetes are identified in similar percentages across the programs and represent approximately 3% of the CSHCN.

(7) Although individual children may move from one health status category to another over time, the percentage of children identified as CSHCN within a program remains relatively stable over time.

(8) For the enrollees in the state Title V program, the CRG classification system identified 44.8% as "healthy," although each pediatric enrollee had to meet certain medical eligibility criteria to be enrolled in the program. This finding has been obtained with other State Title V CSHCN Programs. Some CSHCN may be seen for long periods of time for routine health care needs like preventive care and minor chronic illnesses. At the time of the health care encounter, the underlying chronic condition

may not be reported if the visit is for routine needs. The classification of "healthy" is simply reflecting the resource consumption of these children during the time period studied and as such provides important information about these children. Coding errors also likely contribute to this finding but these errors are usually small. About 1.2% of the Title V enrollees were identified as having malignant conditions and approximately 13% had catastrophic conditions. This is in sharp contrast to the findings in the state Medicaid and SCHIP programs where fewer than 1% of the enrollees had a malignant or catastrophic condition.

Why is this Important?

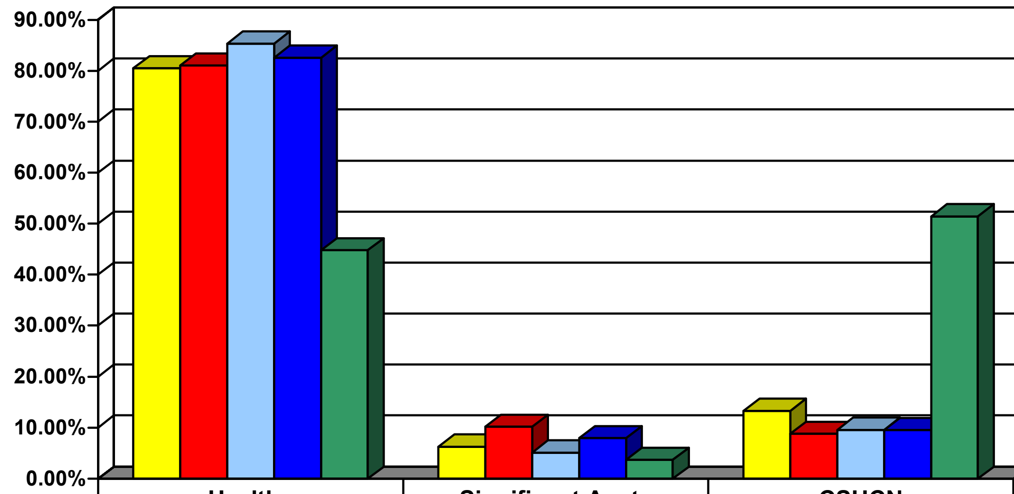
Despite the public perception that CSHCN are predominately enrolled in state Medicaid programs, these results reveal that they are represented in similar percentages across Medicaid and SCHIP health insurance coverage. In addition, these findings are stable from year to year for the overall enrollee pool even though individual children may move from one CRG health status category to another over time. The majority of the CSHCN have minor to moderate chronic conditions. The children with the rarest conditions represent a very small percentage of CSHCN, and this is consistent across each of the state Medicaid and SCHIP programs.

Implications and Recommendations:

Managed care plans and state programs should develop and implement mechanisms to identify CSHCN because these children are in both Medicaid and SCHIP. These identification mechanisms should be conducted upon enrollment into the program and at periodic intervals. Although the total percentage of children identified as CSHCN is relatively stable from year to year, the individual children can move to more or less severe categories over time, depending on the nature of the condition and the child's age. In addition, the children may leave the program due to a variety of reasons (reaching the age limits of the program, obtaining other health insurance coverage) and new enrollees enter the program. Children, once identified as having a special health need, should be monitored to ensure that they have access to the services they need and that the services they receive are of high quality.

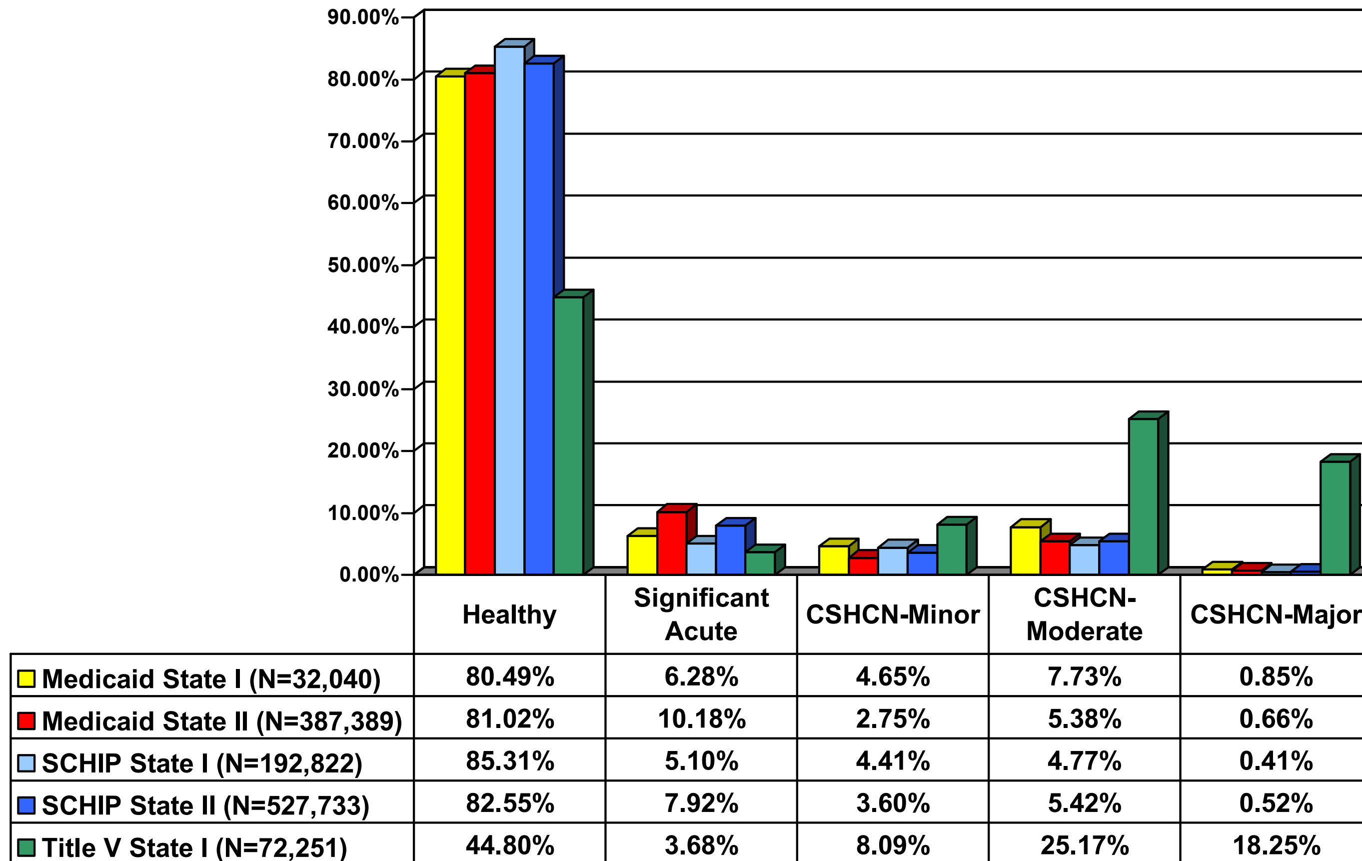
CHART 1-1. Who are the CSHCN Identified by the CRGs in Medicaid, SCHIP and Title V Programs? (Collapsed CRG categories).

Distribution of Pediatric Enrollees by CRG Health Status Category



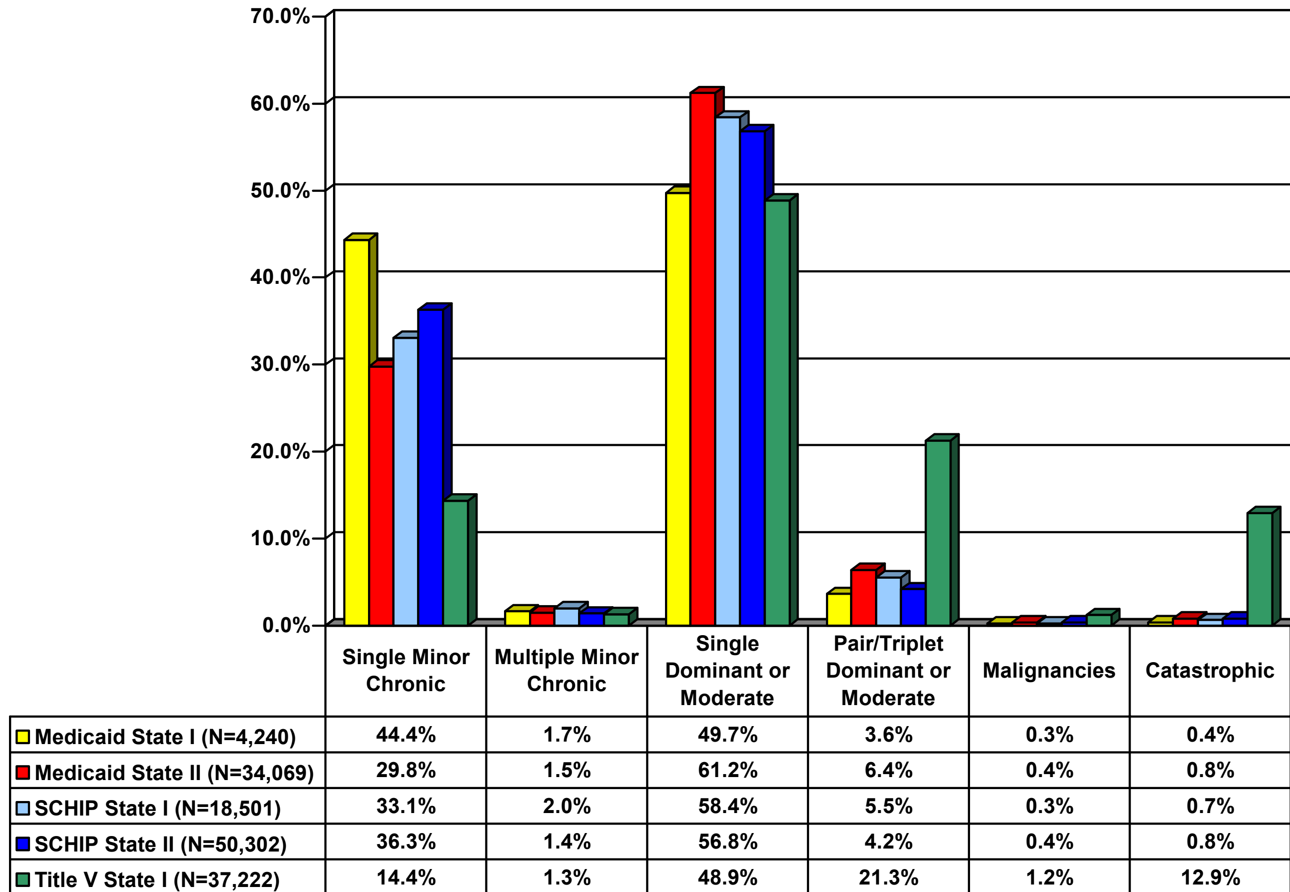
	Healthy	Significant Acute	CSHCN
Medicaid State I (N=32,040)	80.49%	6.28%	13.28%
Medicaid State II (N=387,389)	81.02%	10.18%	8.79%
SCHIP State I (N=192,822)	85.31%	5.10%	9.59%
SCHIP State II (N=527,733)	82.55%	7.92%	9.54%
Title V State I (N=72,251)	44.80%	3.68%	51.41%

CHART 1-2. Who are the CSHCN Identified by the CRGs in Medicaid, SCHIP and Title V Programs? (Expanded CRG categories)



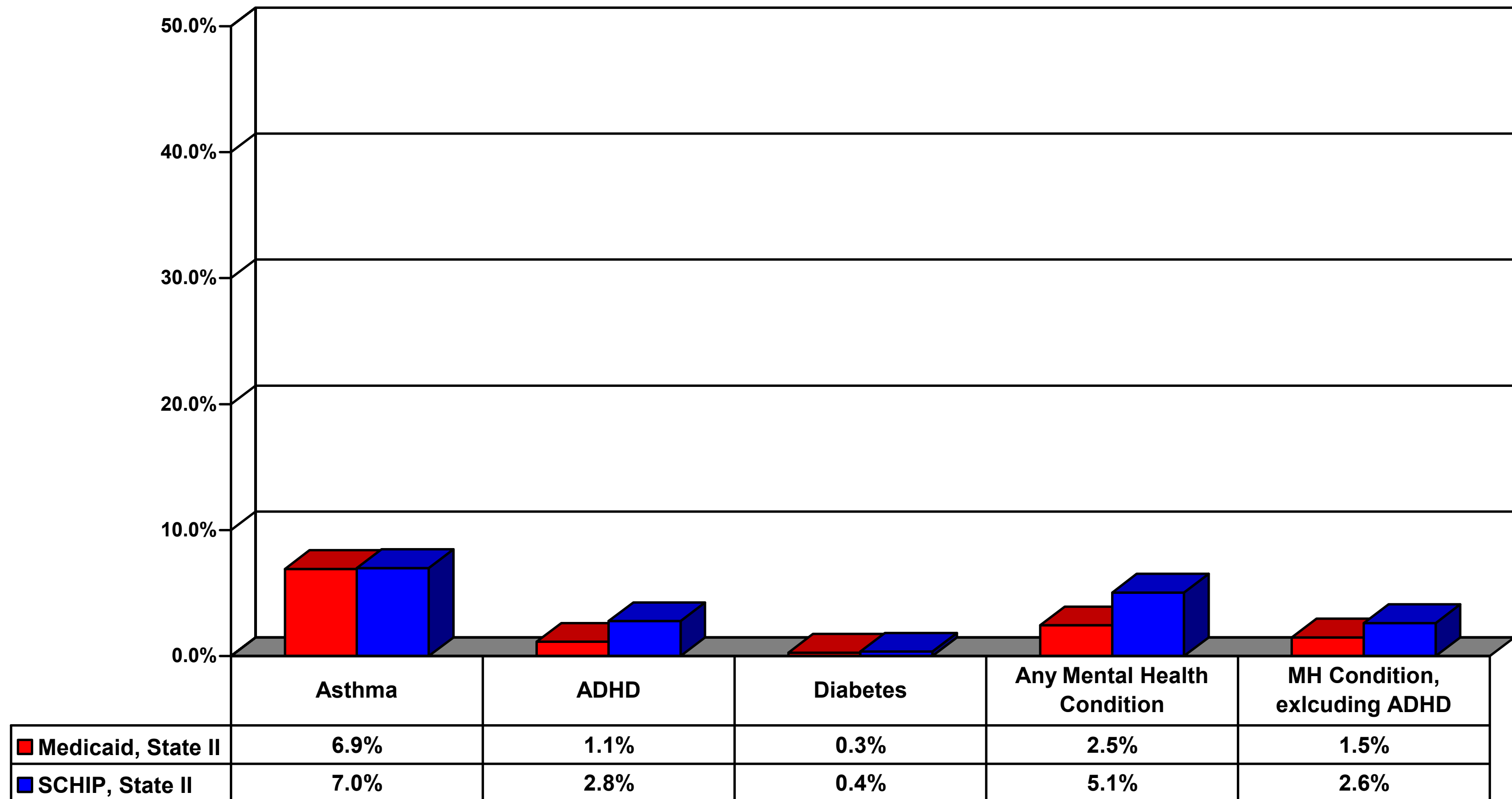
	Healthy	Significant Acute	CSHCN-Minor	CSHCN-Moderate	CSHCN-Major
Medicaid State I (N=32,040)	80.49%	6.28%	4.65%	7.73%	0.85%
Medicaid State II (N=387,389)	81.02%	10.18%	2.75%	5.38%	0.66%
SCHIP State I (N=192,822)	85.31%	5.10%	4.41%	4.77%	0.41%
SCHIP State II (N=527,733)	82.55%	7.92%	3.60%	5.42%	0.52%
Title V State I (N=72,251)	44.80%	3.68%	8.09%	25.17%	18.25%

CHART 1-3. What Types of Conditions or Special Health Care Needs Are Identified by the CRGs in Medicaid, SCHIP and Title V Programs? (Only those CRG categories representing CSHCN)



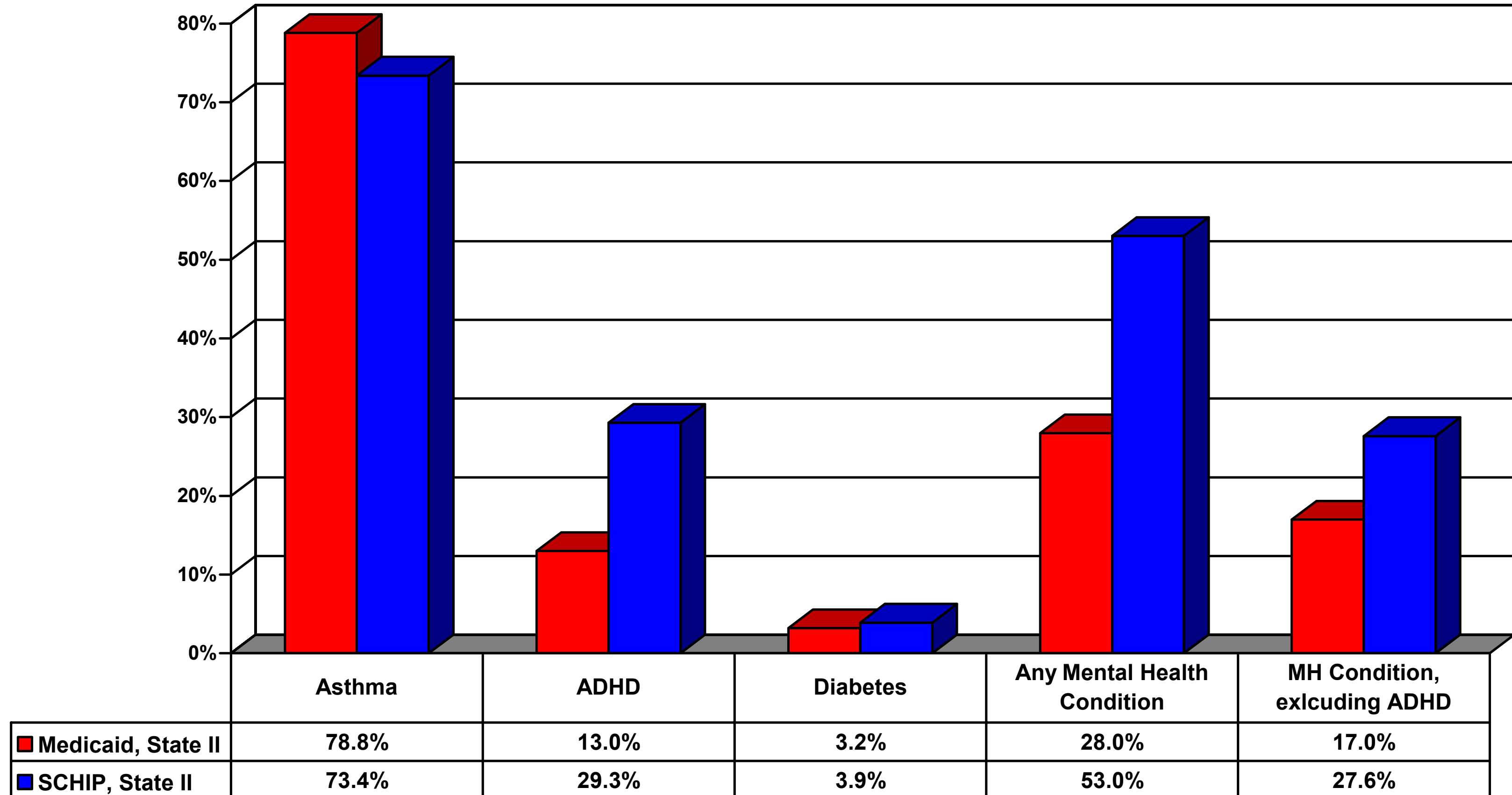
	Single Minor Chronic	Multiple Minor Chronic	Single Dominant or Moderate	Pair/Triplet Dominant or Moderate	Malignancies	Catastrophic
Medicaid State I (N=4,240)	44.4%	1.7%	49.7%	3.6%	0.3%	0.4%
Medicaid State II (N=34,069)	29.8%	1.5%	61.2%	6.4%	0.4%	0.8%
SCHIP State I (N=18,501)	33.1%	2.0%	58.4%	5.5%	0.3%	0.7%
SCHIP State II (N=50,302)	36.3%	1.4%	56.8%	4.2%	0.4%	0.8%
Title V State I (N=37,222)	14.4%	1.3%	48.9%	21.3%	1.2%	12.9%

Chart 1-4. What is the Prevalence of Selected Childhood Conditions in the Total Pediatric Enrollee Population?, Selected Example from State II Medicaid and SCHIP.



	Asthma	ADHD	Diabetes	Any Mental Health Condition	MH Condition, exlcuding ADHD
Medicaid, State II	6.9%	1.1%	0.3%	2.5%	1.5%
SCHIP, State II	7.0%	2.8%	0.4%	5.1%	2.6%

Chart 1-5. What is the Prevalence of Selected Childhood Conditions Among CSHCN Identified by the CRGs?* Selected Example from State II Medicaid and SCHIP



	Asthma	ADHD	Diabetes	Any Mental Health Condition	MH Condition, exlcuding ADHD
Medicaid, State II	78.8%	13.0%	3.2%	28.0%	17.0%
SCHIP, State II	73.4%	29.3%	3.9%	53.0%	27.6%

*Note: these percentages will not add up to 100% for two reasons. First, each child may be counted in multiple condition groups as children may have multiple (co-morbid) conditions. Second, this table focuses only on a selected group of conditions (asthma, ADHD, diabetes, and mental health conditions) and not the entire spectrum of childhood conditions.

Table 1-1. What are the Severity Levels within the CRG Categories for Pediatric Enrollees in a State Medicaid Program?, State II.

	Levels of Severity					Totals	
Status	**0**	**1**	**2**	**3**	**4-6**	**#**	**%**
Healthy	104428					104428	77.93%
Significantly Acute	13631					13631	10.17%
Single Minor Chronic		3568	838			4406	3.29%
Multiple Minor Chronic		165	16	114		295	0.22%
Single Dominant or Moderate Chronic		5660	2574	1014	86	9334	6.97%
Pair Dominant or Moderate Chronic		728	335	379	129	1571	1.17%
Triplet Dom. Or Moderate Chronic		8	20	31	14	73	0.05%
Malignancies		4	44	36	2	86	0.06%
Catastrophic		36	88	48	10	182	0.14%
Totals by Level of Severity	118059	10169	3915	1622	241	134006	100.00%
Pct. Distribution by Level of Severity	88.10%	7.59%	2.92%	1.21%	0.18%	100.00%	

Table 1-2. What are the Severity Levels within the CRG Categories for Pediatric Enrollees in a SCHIP Program?, State II.

	Levels of Severity					Totals	
Status	**0**	**1**	**2**	**3**	**4-6**	**#**	**%**
Healthy	246,768					246,768	82.89%
Significantly Acute	20,858					20,858	7.01%
Single Minor Chronic		9,529	1,221			10,750	3.61%
Multiple Minor Chronic		351	13	120		484	0.16%
Single Dominant or Moderate Chronic		11,453	4278	1407	55	17,193	5.78%
Pair Dominant or Moderate Chronic		802	282	186	38	1,308	0.44%
Triplet Dom. Or Moderate Chronic		1	1	2	1	5	0.00%
Malignancies		7	59	42	1	109	0.04%
Catastrophic		102	71	57	6	236	0.08%
Totals by Level of Severity	267,626	22,245	5,925	1,814	101	297,711	100.00%
Pct. Distribution by Level of Severity	89.89%	7.47%	1.99%	0.61%	0.03%	100.00%	

Table 1-3. What is the Stability of CRG Classification Over Time? Selected Example from State I -- 1999 to 2000.

	1999	2000	Not in Program	Less Severe	No Change	More Severe
Medicaid, State I						
CRG Category						
Healthy	83.73%	85.15%	34.19%	N/A	59.50%	6.31%
Significant Acute	6.21%	6.37%	25.29%	57.07%	10.65%	6.98%
Single Minor Chronic	3.41%	2.89%	20.58%	54.10%	17.20%	8.12%
Multiple Minor Chronic	0.18%	0.14%	29.23%	55.38%	4.62%	10.77%
Single Dominate or Moderate Chronic	5.86%	4.85%	20.98%	56.54%	20.66%	1.83%
Pairs/Triplets or Moderate Chronic	0.46%	0.43%	21.08%	66.26%	12.05%	0.60%
Malignancies	0.04%	0.03%	40.00%	33.34%	26.67%	0.00%
Catastrophic	0.11%	0.13%	7.32%	51.23%	41.46%	N/A
SCHIP, State I						
CRG Category						
Healthy	89.98%	92.34%	42%	N/A	54.47%	3.54%
Significant Acute	4.26%	3.14%	33.65%	54.93%	7.08%	4.34%
Single Minor Chronic	2.67%	2.10%	25.63%	56.14%	14.71%	3.54%
Multiple Minor Chronic	0.07%	0.06%	16.47%	71.77%	4.71%	7.05%
Single Dominate or Moderate Chronic	2.82%	2.21%	26.76%	55.97%	16.34%	92.00%
Pairs/Triplets or Moderate Chronic	0.16%	0.12%	16.71%	74.93%	8.35%	0.00%
Malignancies	0.02%	0.02%	30.95%	54.76%	14.29%	0.00%
Catastrophic	0.02%	0.02%	29.82%	49.12%	21.05%	N/A

Table 1-3, continued.

	1999	2000	Not in Program	Less Severe	No Change	More Severe
Title V, State I						
CRG Category						
Healthy	58.37%	53.49%	29.87%	N/A	50.38%	19.75%
Significant Acute	5.23%	5.41%	35.89%	27.03%	12.85%	24.21%
Single Minor Chronic	5.93%	6.41%	24.19%	26.69%	28.16%	20.96%
Multiple Minor Chronic	0.36%	0.42%	32.95%	32.96%	9.69%	24.42%
Single Dominate or Moderate Chronic	18.73%	21.75%	25.33%	21.85%	38.92%	13.90%
Pairs/Triplets or Moderate Chronic	6.27%	7.22%	28.04%	31.39%	34.94%	5.64%
Malignancies	0.51%	0.54%	34.24%	13.58%	50.27%	1.90%
Catastrophic	4.61%	4.76%	16.16%	23.01%	60.83%	N/A

SECTION 2. Service Use

What are the Health Care Services Used by the CSHCN in Medicaid, SCHIP and Title V?

At a very basic level, it is expected that the majority of children's care will be provided in an outpatient setting with little inpatient and emergency room use. However, children who have chronic conditions or special health care needs may require inpatient hospitalizations, extensive therapies, equipment, and multiple prescriptions as part of their routine care. It is important to understand the types of health care services CSHCN use to ensure adequate access to and financing of their care.

This section of the Chart Book presents the CSHCN's health care use profiles, which were developed using person-level claims/encounter and enrollment data for the same populations of children presented earlier. Grouping the children into CRG categories allows us to compare health care use and expenditures for the same health status category across the different public health insurance programs. Similar to the previous section on identification of CSHCN, the CRG health status categories representing chronic conditions or special health care needs have been collapsed for the presentation of these data. The categories are Healthy, Significant Acute, CSHCN-Minor, CSHCN-Moderate, and CSHCN-Major.

The use or encounter rates are calculated by counting the individual services provided. Visits to multiple providers on the same day are counted as separate visits. This method reflects the intensity of resources used by the individual child. Unless noted, all health care use rates are presented as use per 1,000 member months, as is common in the managed care industry.

Because the health care use patterns were similar across each of the public health insurance programs (Medicaid, SCHIP, and Title V), the results of one state program have been selected for presentation. The Medicaid and SCHIP program selected is in State II and the Title V Program is from State I. The specific information on each of the other state programs is available upon request from staff at the National Center on Financing for CSHCN at the Institute for Child Health Policy, University of Florida.

The first series of tables show use rates for inpatient, outpatient, and emergency department (ED) services. A total use rate is presented which is the sum of these three types of services. The second series of tables present detailed information about outpatient services, including visits to a physician's office and other more specialized outpatient services such as therapies (Physical, Occupational, Speech), pharmacy, ancillary services, and durable medical equipment.

Included in this section of the Chart Book are the following:

Chart 2-1 Health Care Use Rates (per 1,000 member months) in a State Medicaid Program By Expanded CRG Categories, Example State II.
Chart 2-2 Health Care Use Rates (per 1,000 member months) in a State SCHIP Program By Expanded CRG Categories, Example State II.
Chart 2-3 Health Care Use Rates (per 1,000 member months) in a Title V Program By Expanded CRG Categories, Example State I.
Chart 2-4 Outpatient Services Use Rates in (per 1,000 member months) in a State Medicaid Program, By Expanded CRG Categories, (Example State II).
Chart 2-5 Outpatient Services Use Rates in (per 1,000 member months) in a State SCHIP Program, By Expanded CRG Categories, (Example State II).
Chart 2-6 Outpatient Services Use Rates in (per 1,000 member months) in a State Title V Program, By Expanded CRG Categories, (Example State I).

Findings: These health care use profiles illustrate the types of services CSHCN use. Striking similarities emerge about the population of CSHCN across these three public programs including:

(1) The variation in the diversity and the intensity of services by the child's health status category is dramatically illustrated in these graphs. Health care use rates increase considerably with worsening health status, even for children enrolled in the state Title V program. This is most dramatic for the total use category and outpatient health care, but also is observed for both inpatient and ED use. For example, in the SCHIP program, children classified as having special health care needs have 3.75 (CSHCN-Minor) to 17.9 (CSHCN-Major) times as many outpatient physician visits as does a healthy child.

(2) Children, regardless of their health status category, use relatively little inpatient and ED services. This was consistent across the state programs, even in the Title V program. As expected, the incidence of hospitalizations varied by health status. Children classified as CSHCN-Major had 13 times more inpatient days than did children classified as CSHCN-Minor. This difference increases to 40 times more inpatient days than children classified as healthy.

(3) When outpatient services are examined in greater detail, this same pattern of increased service use with decreasing health status (increasing severity of condition) continues across all three public health insurance programs. This pattern was seen

for outpatient surgeries, physician use, ancillary services, therapies, and pharmacy. For example, in the Medicaid program, the difference in use rates for therapies (occupational, physical, and speech), was between 2.9 and 8.6 times greater for CSHCN-Minor and CSHCN-Major than the therapy use rate for healthy children.

Why is this Important?

Although the overall number of CSHCN is relatively small in these public health insurance programs, the impact they have on the total number of encounters with the health care system is dramatic. CSHCN account for between 9% and 12% of the total pediatric enrollees, however, the percentage of the health care encounters attributed to these children is, in one product line, is as high as 29%.

The information in this section can be used to gain a better understanding of the intensity of CSHCN's health care use. If their service use is better understood, reimbursement strategies to support their level of resource consumption can be developed. Moreover, their pattern of service use can be used to design care coordination programs and to ensure that provider networks are adequate to address the CSHCN's service needs. Finally, assessing the extent to which CSHCN use health care services is an important aspect of examining the quality of their health care because these children are potentially at risk for not receiving needed services.[22] However, it is difficult to compare the children's health care use patterns to any benchmarks because few exist.[23]

Implications

The variation in health care use based on the children's health status has financial implications for state programs, health plans, and providers. To ensure adequate financing for CSHCN variations in use rates and their associated expenditures must be considered. If such differences are not considered, health plans and providers may not be willing to care for certain children due to time and financial constraints, thereby reducing access to care for this vulnerable group.

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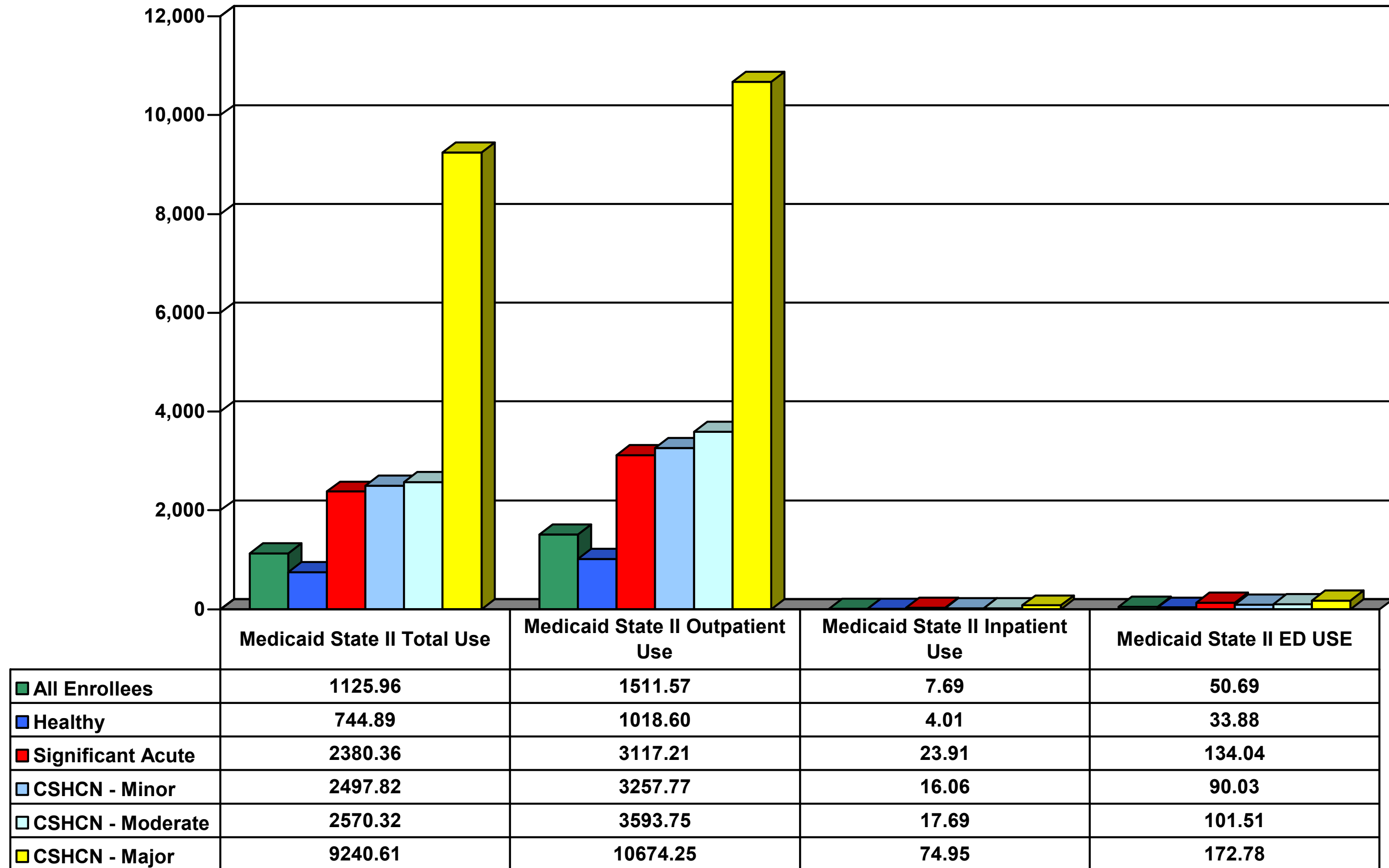
[22] Davidson, S.M., Davidson, H., Miracle-McMahill, H., Oakes, J.M., Crawford, S., Blumenthal, D., Valentine, D.P. 2003. Utilization of Services by Chronically-Ill People in Managed Care Plans: Implications for Quality. *Inquiry*, 40(1):57-70.

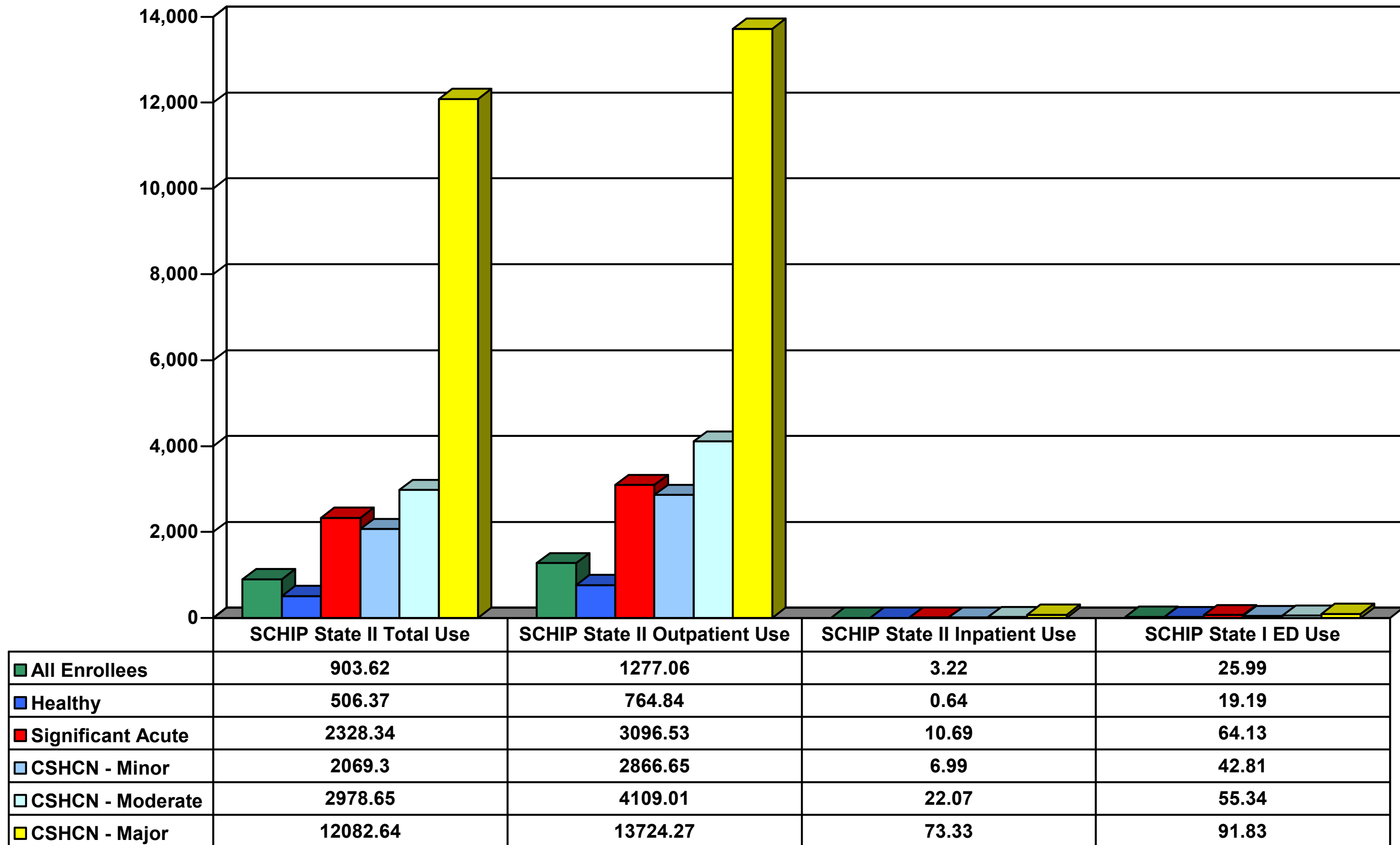
[23] Perrin J. 2002. Health Services Research for Children with Disabilities. *The Milbank Quarterly.* 800(2):303-324.

Chart 2-1. Health Care Use Rates (per 1,000 member months) in a State Medicaid Program By Expanded CRG Categories, (Example State II).



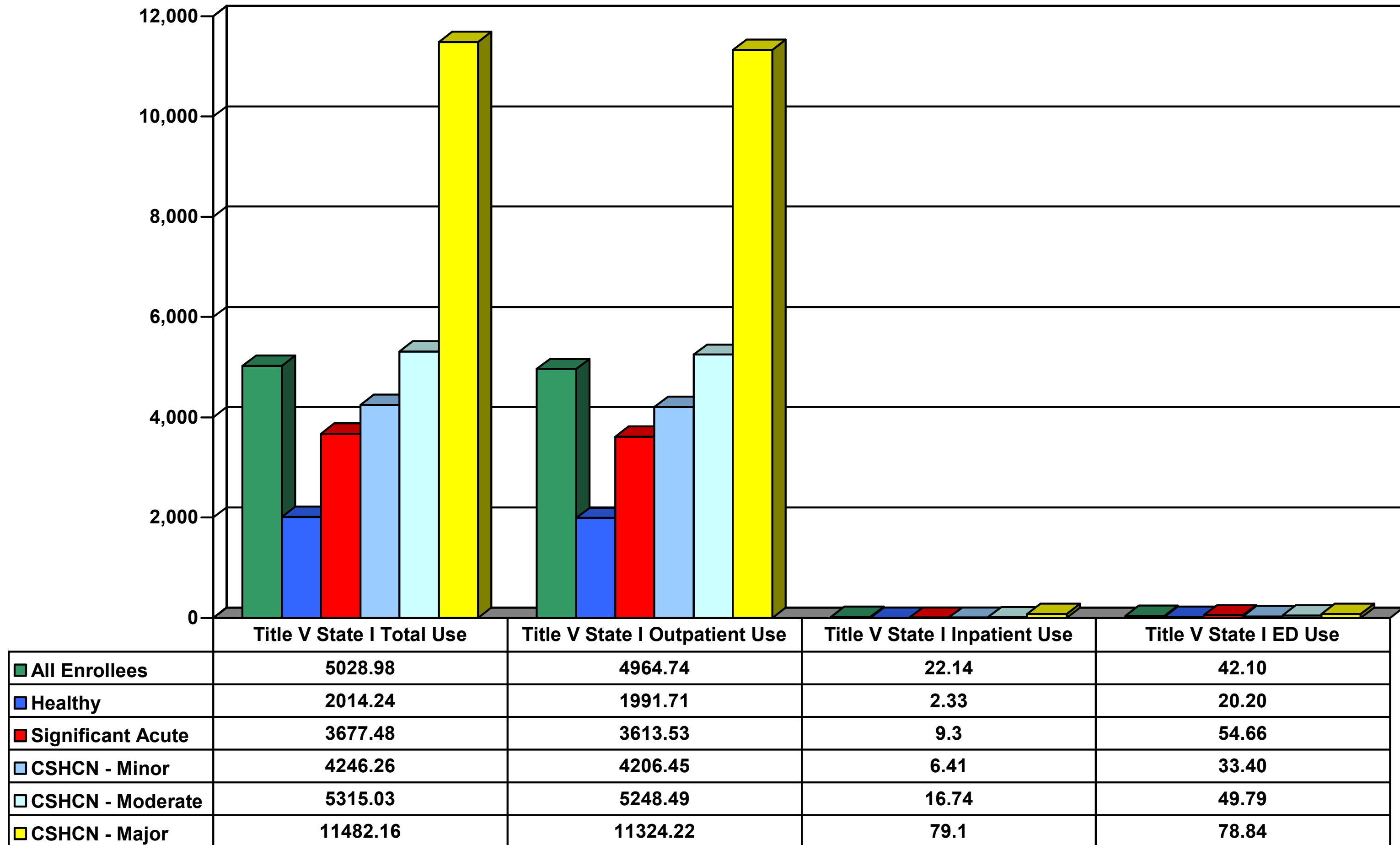
	Medicaid State II Total Use	Medicaid State II Outpatient Use	Medicaid State II Inpatient Use	Medicaid State II ED USE
All Enrollees	1125.96	1511.57	7.69	50.69
Healthy	744.89	1018.60	4.01	33.88
Significant Acute	2380.36	3117.21	23.91	134.04
CSHCN - Minor	2497.82	3257.77	16.06	90.03
CSHCN - Moderate	2570.32	3593.75	17.69	101.51
CSHCN - Major	9240.61	10674.25	74.95	172.78

Chart 2-2. Health Care Use Rates (per 1,000 member months) in a State SCHIP Program By Expanded CRG Categories, (Example State II).



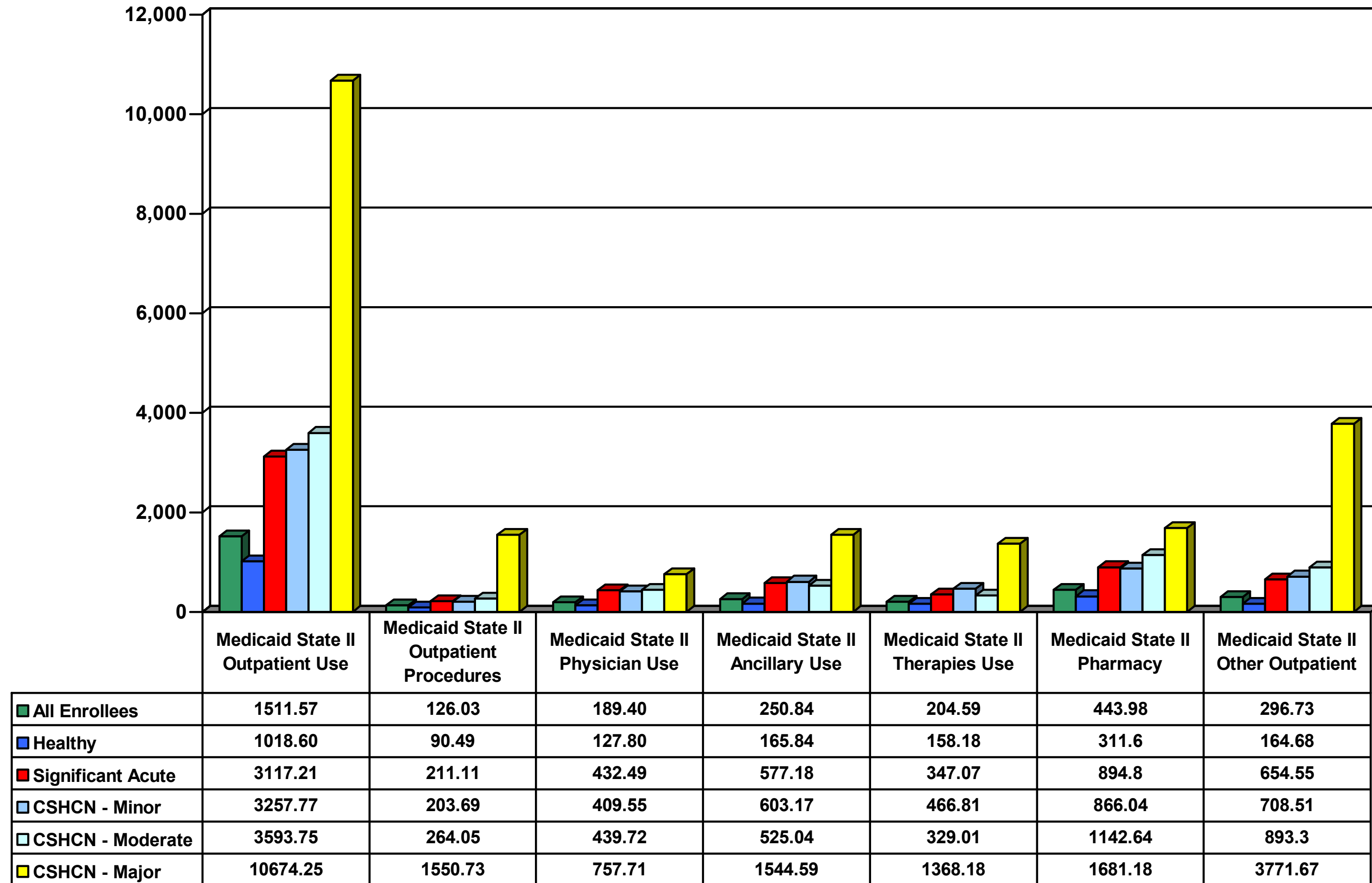
	SCHIP State II Total Use	SCHIP State II Outpatient Use	SCHIP State II Inpatient Use	SCHIP State I ED Use
All Enrollees	903.62	1277.06	3.22	25.99
Healthy	506.37	764.84	0.64	19.19
Significant Acute	2328.34	3096.53	10.69	64.13
CSHCN - Minor	2069.3	2866.65	6.99	42.81
CSHCN - Moderate	2978.65	4109.01	22.07	55.34
CSHCN - Major	12082.64	13724.27	73.33	91.83

Chart 2-3. Health Care Use Rates (per 1,000 member months) in a State Title V Program By Expanded CRG Categories, (Example State I).



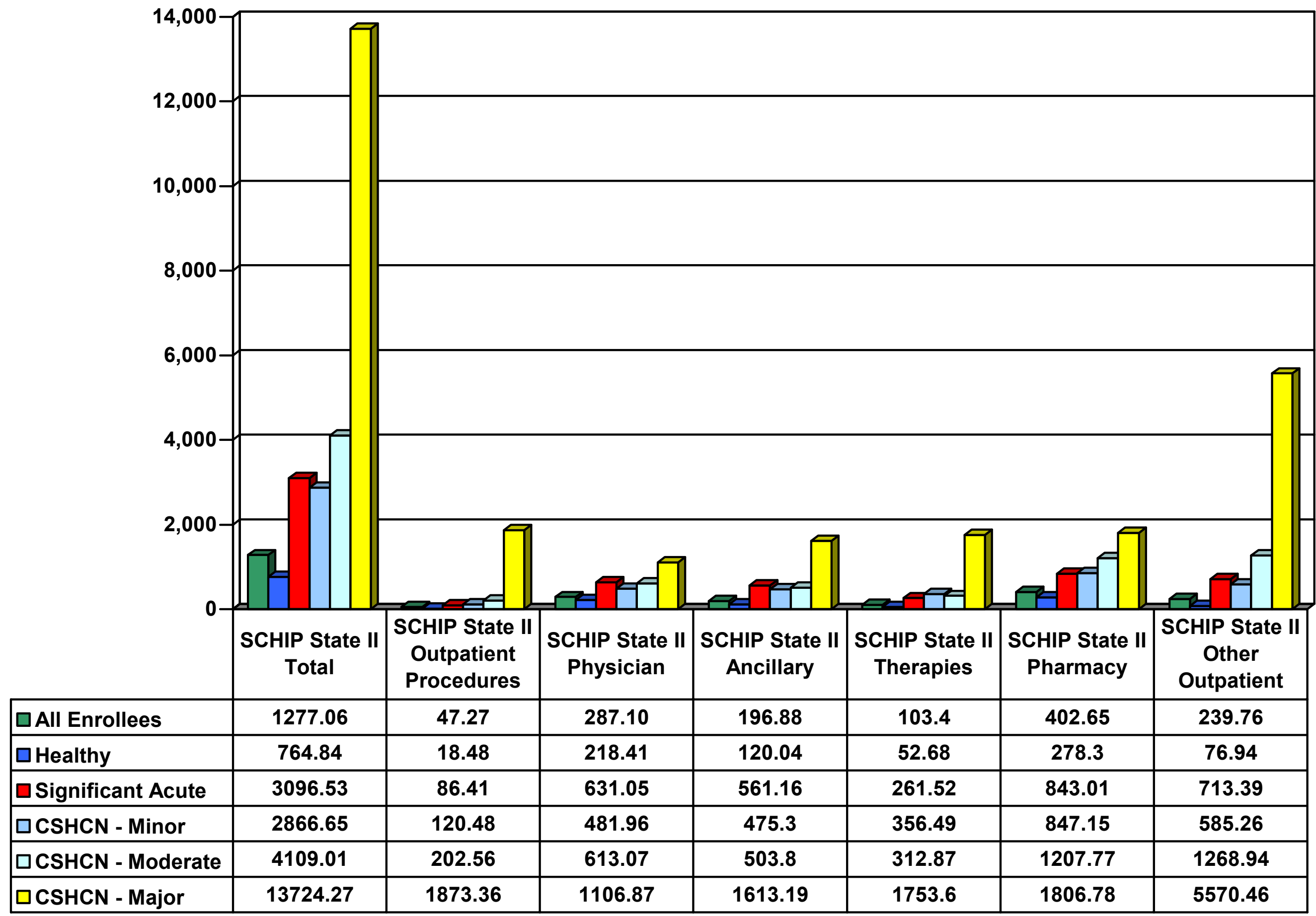
	Title V State I Total Use	Title V State I Outpatient Use	Title V State I Inpatient Use	Title V State I ED Use
All Enrollees	5028.98	4964.74	22.14	42.10
Healthy	2014.24	1991.71	2.33	20.20
Significant Acute	3677.48	3613.53	9.3	54.66
CSHCN - Minor	4246.26	4206.45	6.41	33.40
CSHCN - Moderate	5315.03	5248.49	16.74	49.79
CSHCN - Major	11482.16	11324.22	79.1	78.84

Chart 2-4. Outpatient Services Use Rates (per 1,000 member months) in a State Medicaid Insurance Program By Expanded CRG Categories, (Example State II).



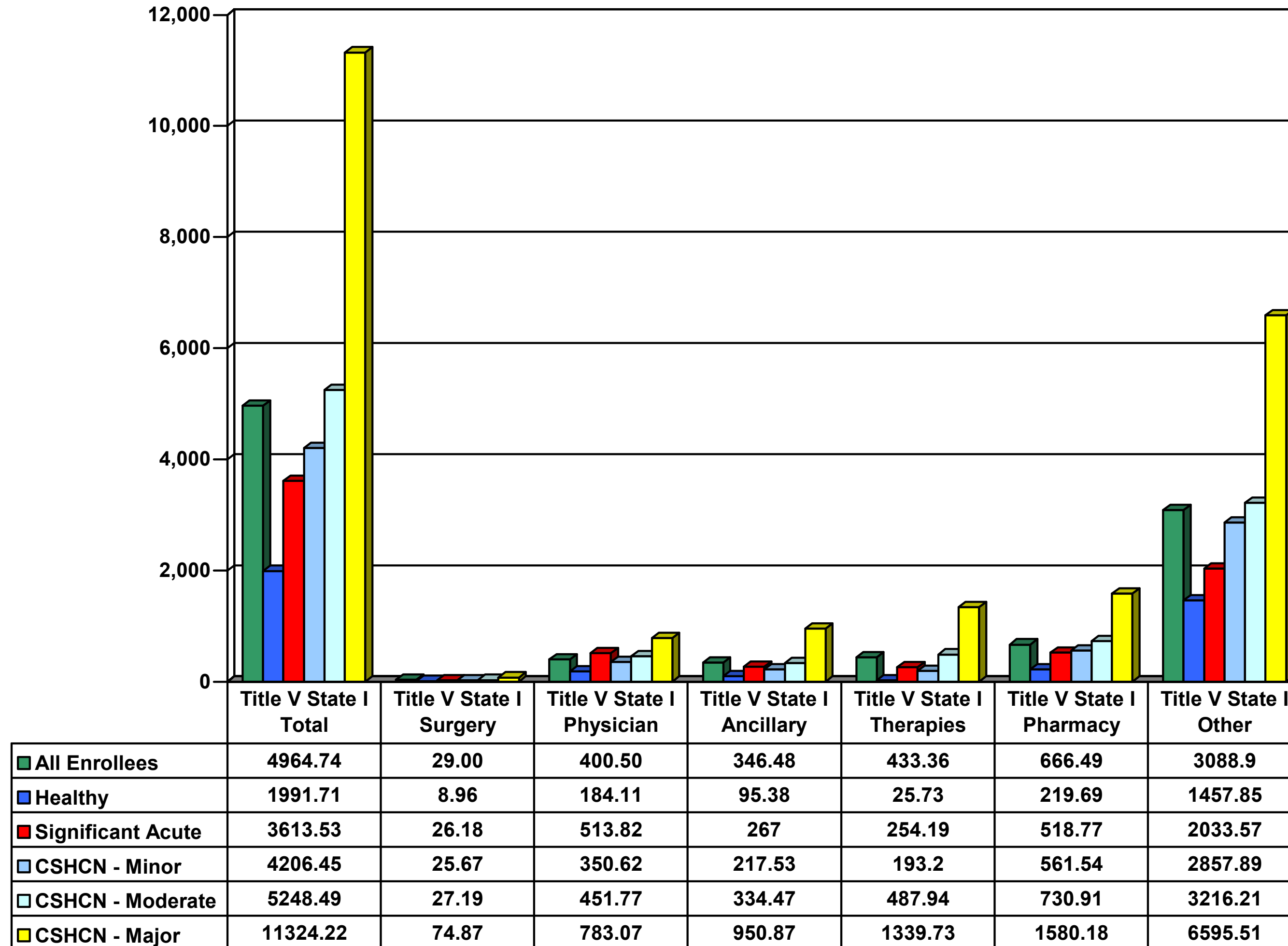
	Medicaid State II Outpatient Use	Medicaid State II Outpatient Procedures	Medicaid State II Physician Use	Medicaid State II Ancillary Use	Medicaid State II Therapies Use	Medicaid State II Pharmacy	Medicaid State II Other Outpatient
All Enrollees	1511.57	126.03	189.40	250.84	204.59	443.98	296.73
Healthy	1018.60	90.49	127.80	165.84	158.18	311.6	164.68
Significant Acute	3117.21	211.11	432.49	577.18	347.07	894.8	654.55
CSHCN - Minor	3257.77	203.69	409.55	603.17	466.81	866.04	708.51
CSHCN - Moderate	3593.75	264.05	439.72	525.04	329.01	1142.64	893.3
CSHCN - Major	10674.25	1550.73	757.71	1544.59	1368.18	1681.18	3771.67

Chart 2-5. Outpatient Services Use Rates (per 1,000 member months) in a State SCHIP Insurance Program By Expanded CRG Categories, (Example State II).



	SCHIP State II Total	SCHIP State II Outpatient Procedures	SCHIP State II Physician	SCHIP State II Ancillary	SCHIP State II Therapies	SCHIP State II Pharmacy	SCHIP State II Other Outpatient
All Enrollees	1277.06	47.27	287.10	196.88	103.4	402.65	239.76
Healthy	764.84	18.48	218.41	120.04	52.68	278.3	76.94
Significant Acute	3096.53	86.41	631.05	561.16	261.52	843.01	713.39
CSHCN - Minor	2866.65	120.48	481.96	475.3	356.49	847.15	585.26
CSHCN - Moderate	4109.01	202.56	613.07	503.8	312.87	1207.77	1268.94
CSHCN - Major	13724.27	1873.36	1106.87	1613.19	1753.6	1806.78	5570.46

Chart 2-6. Outpatient Services Use Rates (per 1,000 member months) in a State Title V Program By Expanded CRG Categories, (Example State I).



	Title V State I Total	Title V State I Surgery	Title V State I Physician	Title V State I Ancillary	Title V State I Therapies	Title V State I Pharmacy	Title V State I Other
All Enrollees	4964.74	29.00	400.50	346.48	433.36	666.49	3088.9
Healthy	1991.71	8.96	184.11	95.38	25.73	219.69	1457.85
Significant Acute	3613.53	26.18	513.82	267	254.19	518.77	2033.57
CSHCN - Minor	4206.45	25.67	350.62	217.53	193.2	561.54	2857.89
CSHCN - Moderate	5248.49	27.19	451.77	334.47	487.94	730.91	3216.21
CSHCN - Major	11324.22	74.87	783.07	950.87	1339.73	1580.18	6595.51

SECTION 3. Expenditures

What are the Expenditures Associated with Providing Care to CSHCN in Medicaid, SCHIP and Title V?

Although childhood chronic conditions are rare with most occurring at a rate of less than 1 in 1,000,[24] CSHCN account for a disproportionate share of the health care expenditures in pediatric populations.[25] It is intuitive that the expenses associated with caring for CSHCN would vary according to the child's health status category and the severity of their condition, but little is actually known about the exact nature of the expenditures.

As indicated previously, the expenditures presented in the following graphs were calculated by linking the CPT codes to either the state Medicaid fee schedule or the 50% fee obtained from a standardized schedule of physician fees across the nation, when a comprehensive state Medicaid fee schedule wasn't available. A per diem of $3,000 was assigned to each day of an inpatient stay and a wholesale price index was used to assign charges to the data contained in the pharmacy file. Therefore, the expenditures reported in this Chart Book do not reflect the states' actual payment experiences. The purpose of the illustrations included in this Chart Book, is to examine the relative differences between groups of children based on their health status; the actual dollar amounts or exact expenditures are not as critical as the relationships observed between groups of children and across multiple state public health insurance programs.

For some of the graphs, the CRG categories were collapsed into Healthy, Significant Acute, and All Chronic Conditions because of the small numbers of children in some of the categories. To provide as much detail as possible, other graphs were expanded to reflect Healthy, Significant Acute, CSHCN – Minor, CSHCN – Moderate, and CSHCN – Major categories. Additional graphs containing data for all of the nine CRG health status categories and the corresponding PMPM expenditures are included in Appendix B.

The expenditure information is calculated on a PMPM basis, another standard tool used in the managed care industry. Also, as was noted in the section of use patterns, the patterns observed were very similar across each of the programs. For ease of presentation, selected states have been included in this Chart Book. Readers who are interested in the additional detail and specific

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[24] Perrin J. 2002. Health Services Research for Children with Disabilities. *The Milbank Quarterly.* 800(2):303-324.

[25] Kuhlthau KA, Perrin JM, Ettner SL, McLaughlin TJ, Gortmaker SL. 1998. High Expenditure Children with Supplemental Security Income. *Pediatrics.* 102(3):610-615.

data for each state program are encouraged to contact the staff at the National Center on Financing for CSHCN at the Institute for Child Health Policy, University of Florida.

The descriptive information presented in this section of the Chart Book includes the following:

Chart 3-1 Per Member Per Month (PMPM) Total Expenditures in Medicaid and SCHIP By Collapsed CRG Categories
Chart 3-2 Per Member Per Month (PMPM) Total Expenditures in a Title V Program By Collapsed CRG Categories
Chart 3-3 Per Member Per Month (PMPM) Total Expenditures in Medicaid and SCHIP By Expanded CRG Categories
Chart 3-4 Per Member Per Month (PMPM) Total Expenditures in a Title V Program By Expanded CRG Categories
Chart 3-5 Example: Distribution of Total Expenditures Across Collapsed CRG Categories in Public Health Insurance (Healthy Compared to Significant Acute and Chronic Conditions), State II.
Chart 3-6 Per Member Per Month (PMPM) Expenditures in Medicaid By Expanded CRG Categories, State II
Chart 3-7 Per Member Per Month (PMPM) Expenditures in SCHIP By Expanded CRG Categories, State II
Chart 3-8 Per Member Per Month (PMPM) Expenditures in Title V By Expanded CRG Categories
Chart 3-9 Per Member Per Month (PMPM) Outpatient Expenditures in Medicaid State II By Expanded CRG Categories
Chart 3-10 Per Member Per Month (PMPM) Outpatient Expenditures in SCHIP State II By Expanded CRG Categories

Findings:

Similar to the observations for the health care use rates, there are dramatic differences in the expenditures associated with caring for CSHCN based on their health status category. For the total enrollee pool, the PMPM expenditures for the two state Medicaid programs are $149.43 in State I and $114.01 in State II. The PMPM expenditures are significantly lower in SCHIP ($67.92 in State I and $78.78 in State II). This finding could be due to different factors such as the differences in the percentages of CSHCN served by Medicaid versus SCHIP (Chart 3-1) and/or differences in benefit package design. Regardless of the program, the PMPM expenditures vary dramatically across the CRG categories. As an example, in the Medicaid State I program, the PMPM expenditures are $79.07 for healthy children, $288.57 for those categorized as "significant acute," and $512.52 for those with a chronic illness. Children in the state Title V program have a PMPM of $1,835.31 for the total enrollee population and a PMPM of $3,359.39 for those in the chronic condition categories.

Charts 3-3 and 3-4 present PMPM expenditure information for the same programs using the expanded CRG categories. The graphs with the information for all CRG categories are included in Appendix B. Again, a similar pattern is observed across each public insurance program; the PMPM expenditures increase as the children's conditions become more severe. Children with malignancies and catastrophic conditions have the highest PMPM expenditures. Although the children identified as CSHCN

account for a relatively small percentage of the enrollee population (less than 10% of all enrollees) in each of the programs, they account for between 38% and 44% of the program's expenditures (Chart 3-5).

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These results also indicate that the portion of the PMPM attributable to inpatient costs increase as the CRG categories change from CSHCN – Minor to CSHCN – Major. These graphs reveal an extremely low portion of the PMPM expenditures coming from the ED visits and this is consistent with the health care use patterns for ED observed in the previous section. Moreover, there are increasing outpatient expenditures as the CSHCN status changes from Minor to Major although the difference is not as pronounced as it is for inpatient expenditures. The charts presenting the outpatient expenditure patterns include outpatient procedures, physician visits, ancillary services, therapies, pharmacy and other services as well as a total outpatient PMPM expenditure. The largest contributor to total outpatient expenditures are pharmacy costs, ancillary services, and "other" (which includes HCPCS codes and consultations). As was observed in the previous charts, the PMPM expenditures increase significantly when the child is identified as being CSHCN and are dramatic when the child is classified as CSHCN – Major category.

In conclusion, the following findings were obtained:

(1) Although CSHCN represent approximately 9% to10% of all pediatric enrollees in the public health insurance programs, they account for between 38% to 44% of total health care expenditures.

(2) The distribution of charges across cost categories (i.e., inpatient, outpatient, and so on) differs significantly for healthy children compared to children with chronic conditions.

(4) Average and median charges increase with worsening health status and this is most pronounced for the children identified as CSHCN – Major (CRG categories #6, 7, 8, and 9).

(5) The most expensive services are for inpatient care and, in the outpatient setting, prescription drugs, ancillary services, and other equipment (HCPCS) related expenditures are the most expensive services.

(6) Medicaid programs tend to have slightly higher PMPM expenditures than is observed for the SCHIP programs. Title V, however, has the highest PMPM as would be expected based on the program's focus on children with chronic conditions.

(7) The observed patterns for health care expenditures are the same for each of the state programs.

Why is this Important?

Despite the relatively small percentage of CSHCN in most state programs or health plans, this population of children is responsible for a large percentage of the health care expenditures. Because the health care expenditures for some children are so high small variations in enrollees' case-mix can have significant financial implications for health plans and providers. In particular, smaller MCOs and individual providers may be less able to absorb the costs associated with enrollees who have chronic conditions affecting multiple body systems or those with malignancies or catastrophic conditions. More adequate reimbursement, reflecting the child's health status, is needed at both the plan and the provider level.

Implications and Recommendations:

The majority of children in Medicaid and SCHIP are healthy. However, there are a small, but substantial percentage of CSHCN who account for a large share of the health care dollars. These results have implications for funding the Medicaid Program and SCHIP and for reimbursing health plans and providers. The National Center for Financing for CSHCN at the Institute for Child Health Policy released a publication that presents information about financing and reimbursement strategies for health plans caring for CSHCN.[26]

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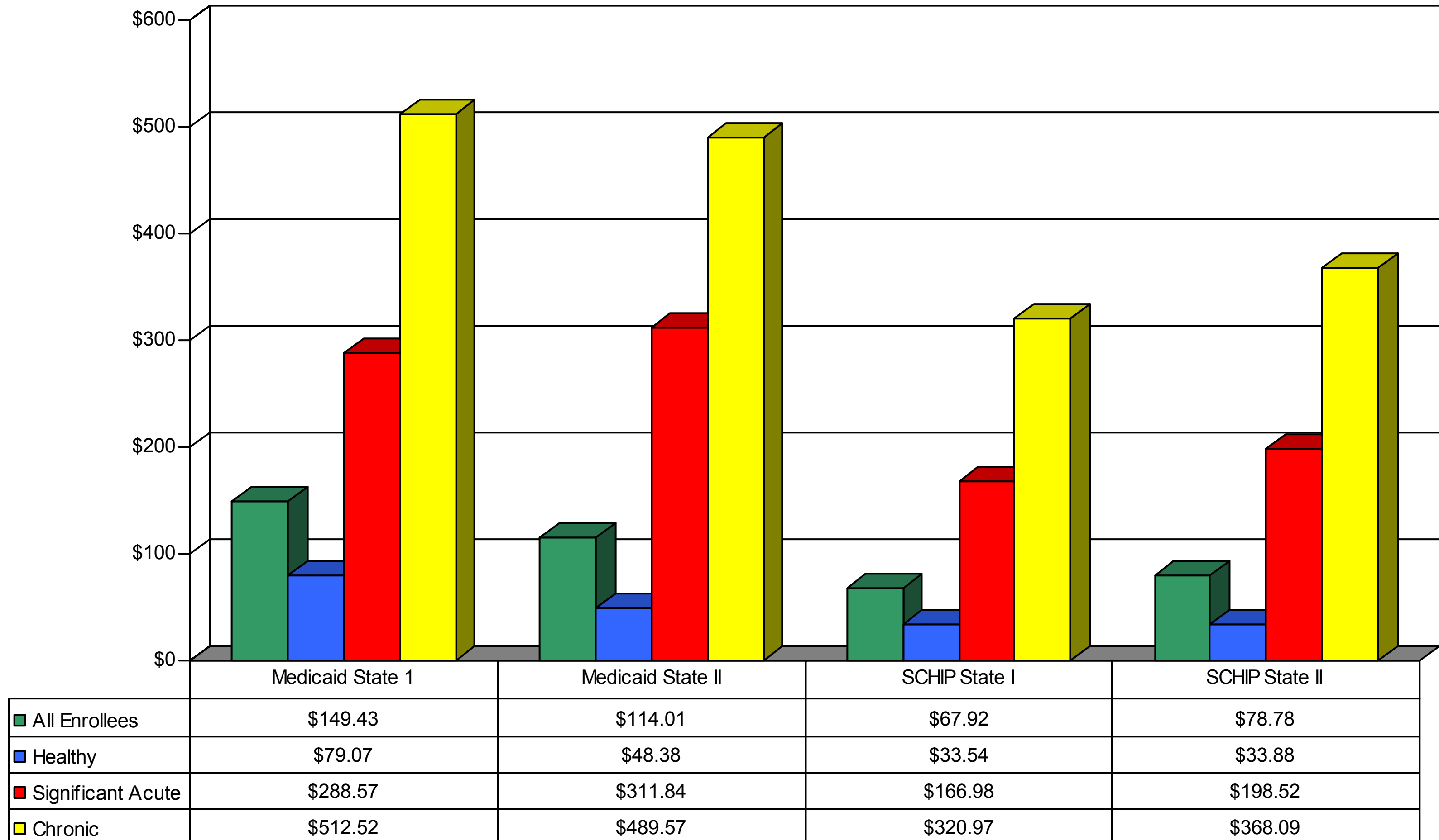
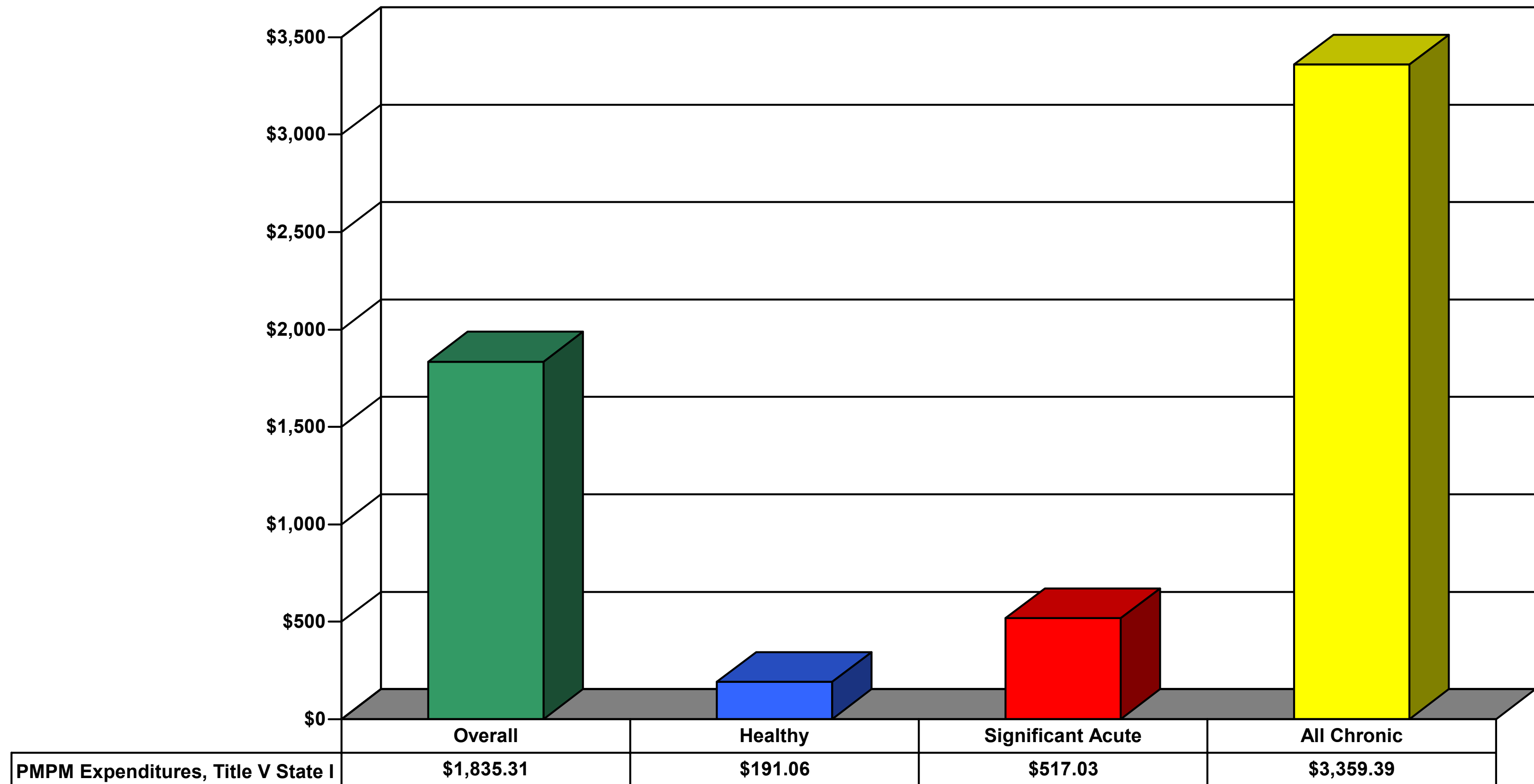
[26] Shenkman, E. et al. April 2004. Technical Report on Financing and Reimbursement Strategies for Children with Special Health Care Needs. Institute for Child Health Policy at the University of Florida: Gainesville, Florida.

Chart 3-1. Per Member Per Month (PMPM) Health Care Expenditures in Medicaid and SCHIP, By Collapsed CRG Categories.



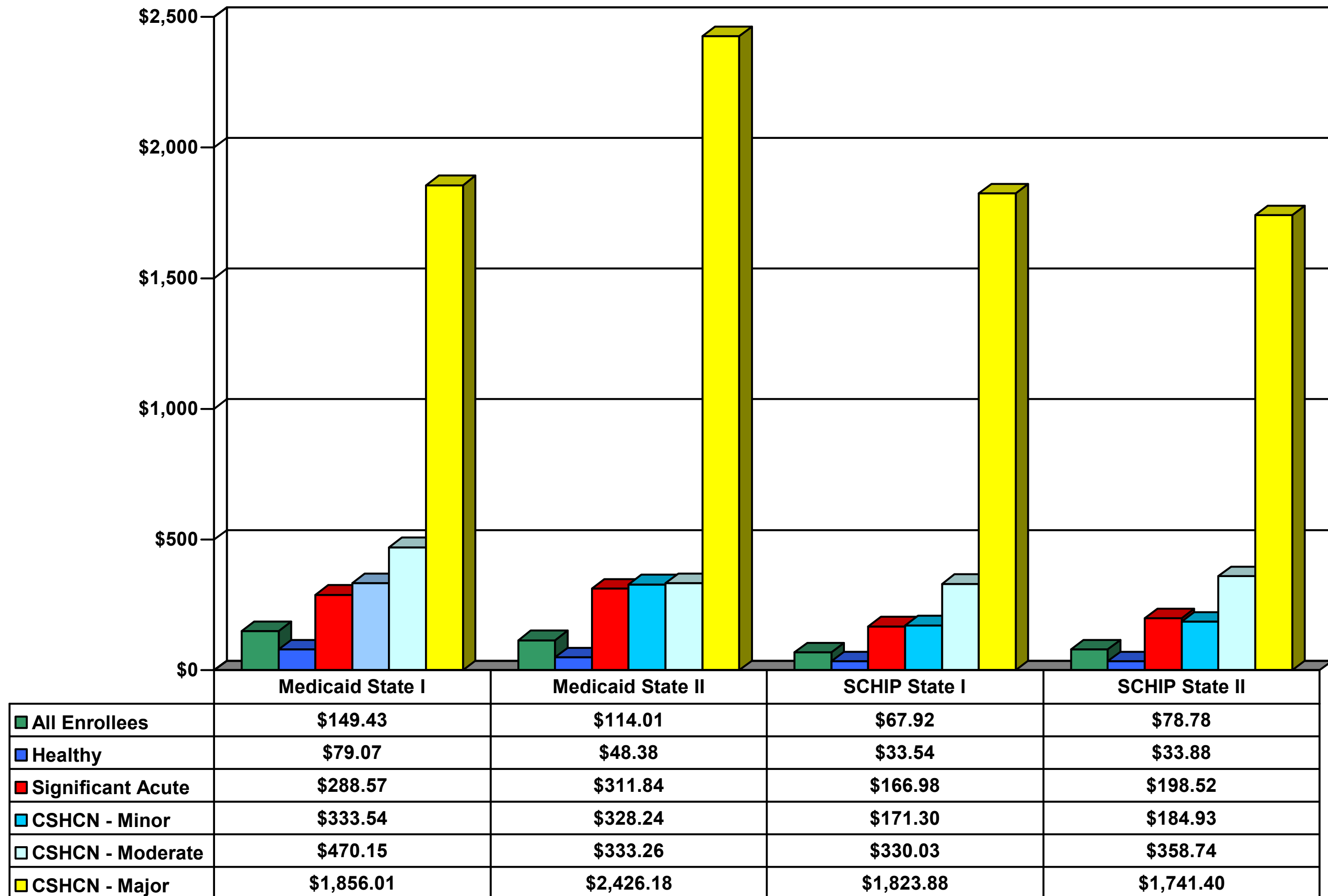
	Medicaid State 1	Medicaid State II	SCHIP State I	SCHIP State II
All Enrollees	$149.43	$114.01	$67.92	$78.78
Healthy	$79.07	$48.38	$33.54	$33.88
Significant Acute	$288.57	$311.84	$166.98	$198.52
Chronic	$512.52	$489.57	$320.97	$368.09

CHART 3-2. Per Member Per Month (PMPM) Total Expenditures in a Title V Program, By Collapsed CRG Categories



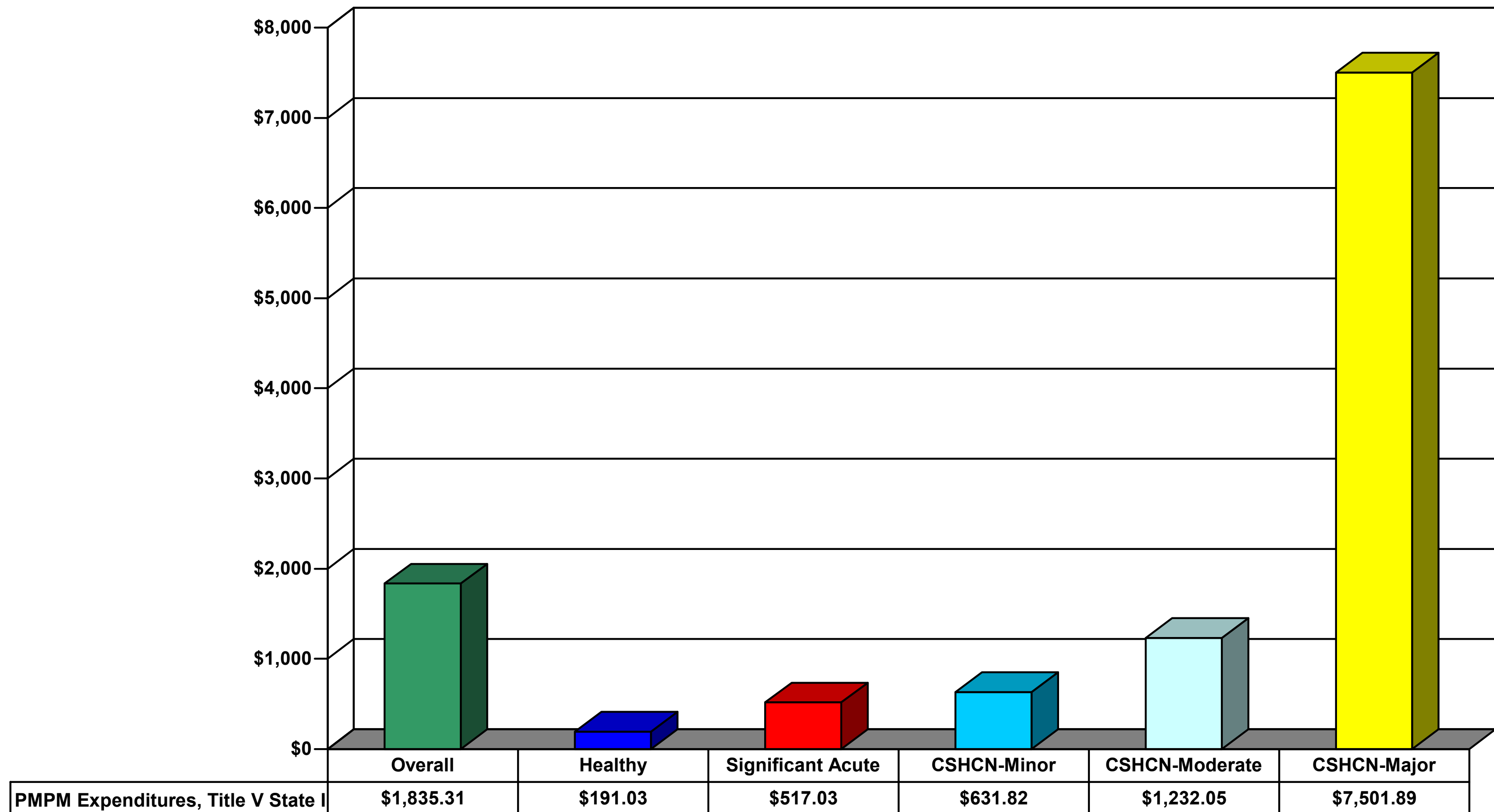
	Overall	Healthy	Significant Acute	All Chronic
PMPM Expenditures, Title V State I	$1,835.31	$191.06	$517.03	$3,359.39

CHART 3-3. Per Member Per Month (PMPM) Total Expenditures in Medicaid and SCHIP By Expanded CRG Categories



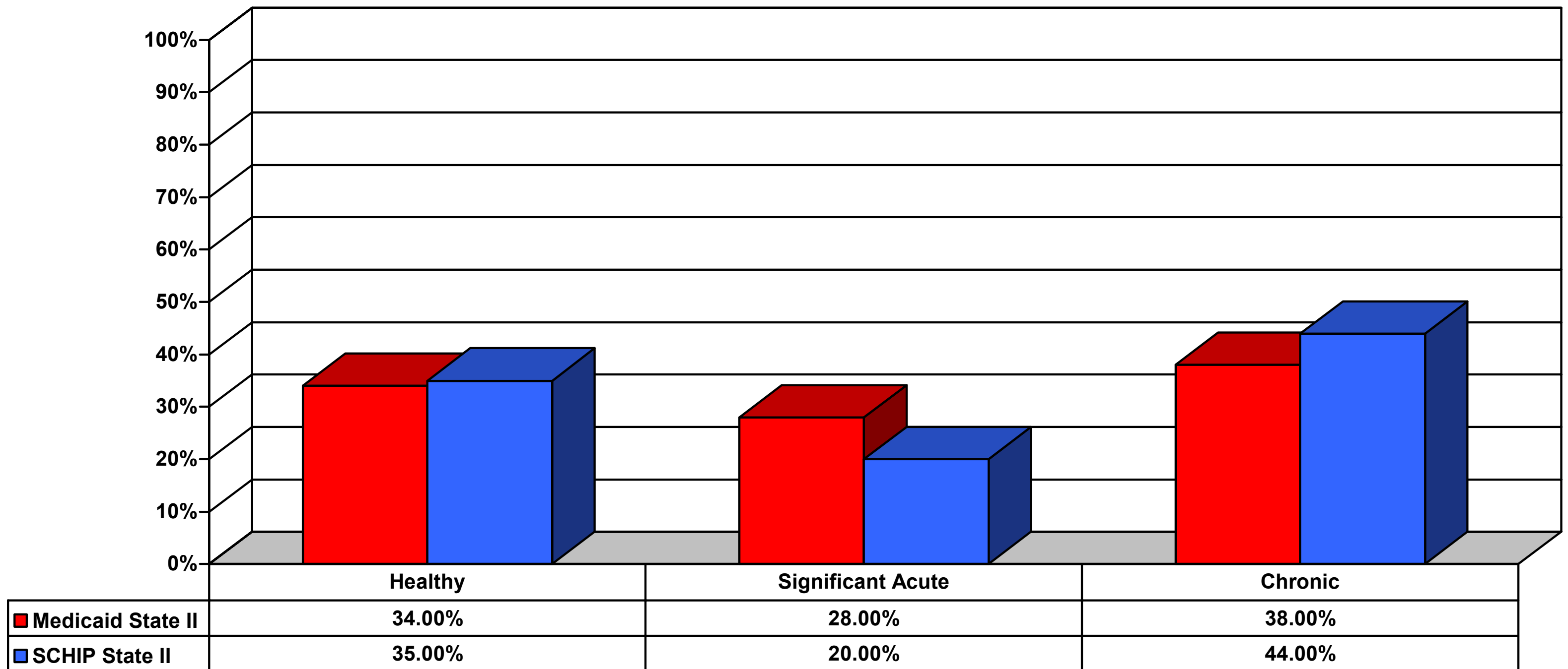
	Medicaid State I	Medicaid State II	SCHIP State I	SCHIP State II
All Enrollees	$149.43	$114.01	$67.92	$78.78
Healthy	$79.07	$48.38	$33.54	$33.88
Significant Acute	$288.57	$311.84	$166.98	$198.52
CSHCN - Minor	$333.54	$328.24	$171.30	$184.93
CSHCN - Moderate	$470.15	$333.26	$330.03	$358.74
CSHCN - Major	$1,856.01	$2,426.18	$1,823.88	$1,741.40

CHART 3-4. Per Member Per Month Total Expenditures (PMPM) in a Title V Program By Expanded CRG Categories



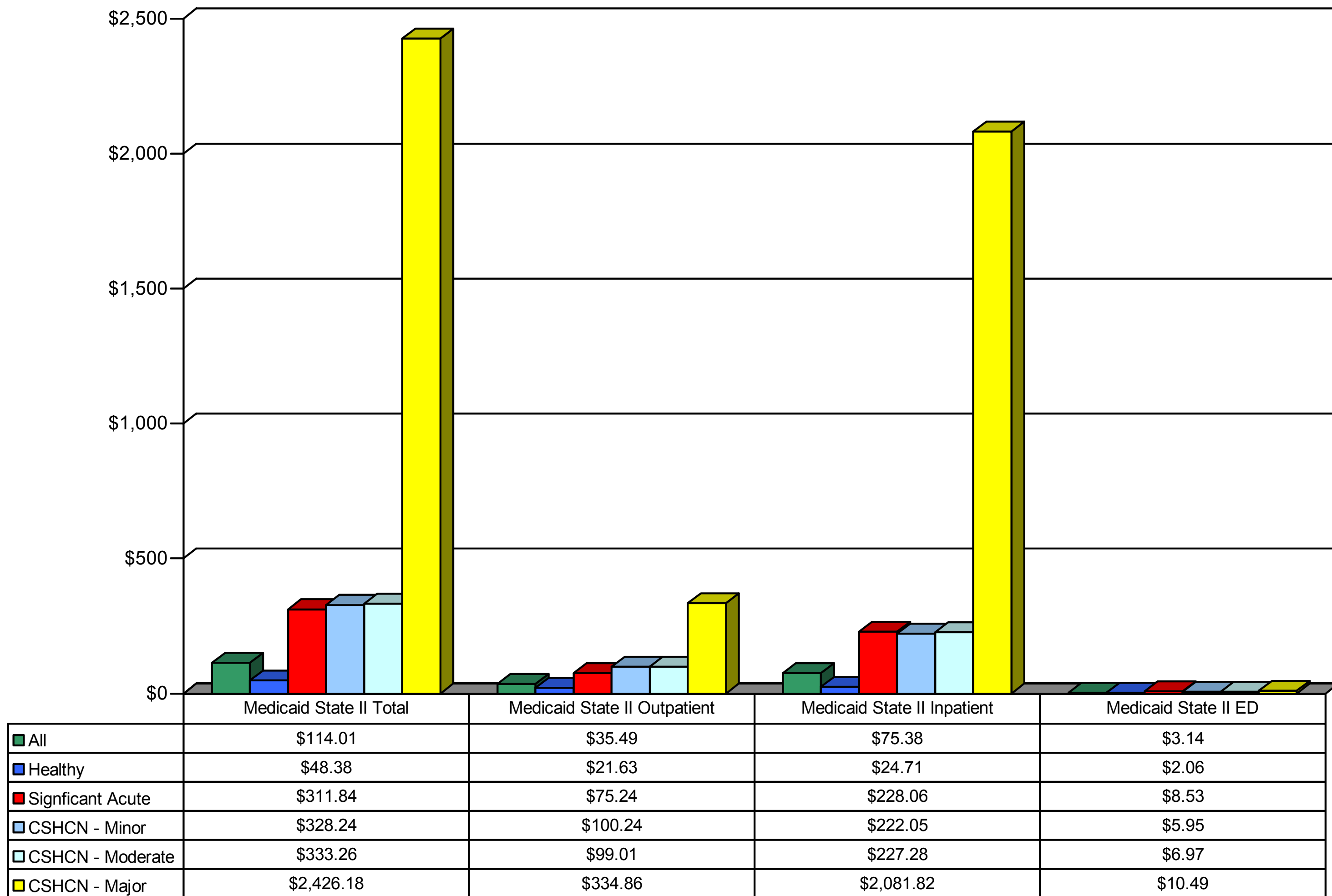
	Overall	Healthy	Significant Acute	CSHCN-Minor	CSHCN-Moderate	CSHCN-Major
PMPM Expenditures, Title V State I	$1,835.31	$191.03	$517.03	$631.82	$1,232.05	$7,501.89

CHART 3-5 Example: Distribution of Total Expenditures Across Collapsed CRG Categories in Medicaid and SCHIP (Healthy Compared to Significant Acute and Chronic Conditions), State II.



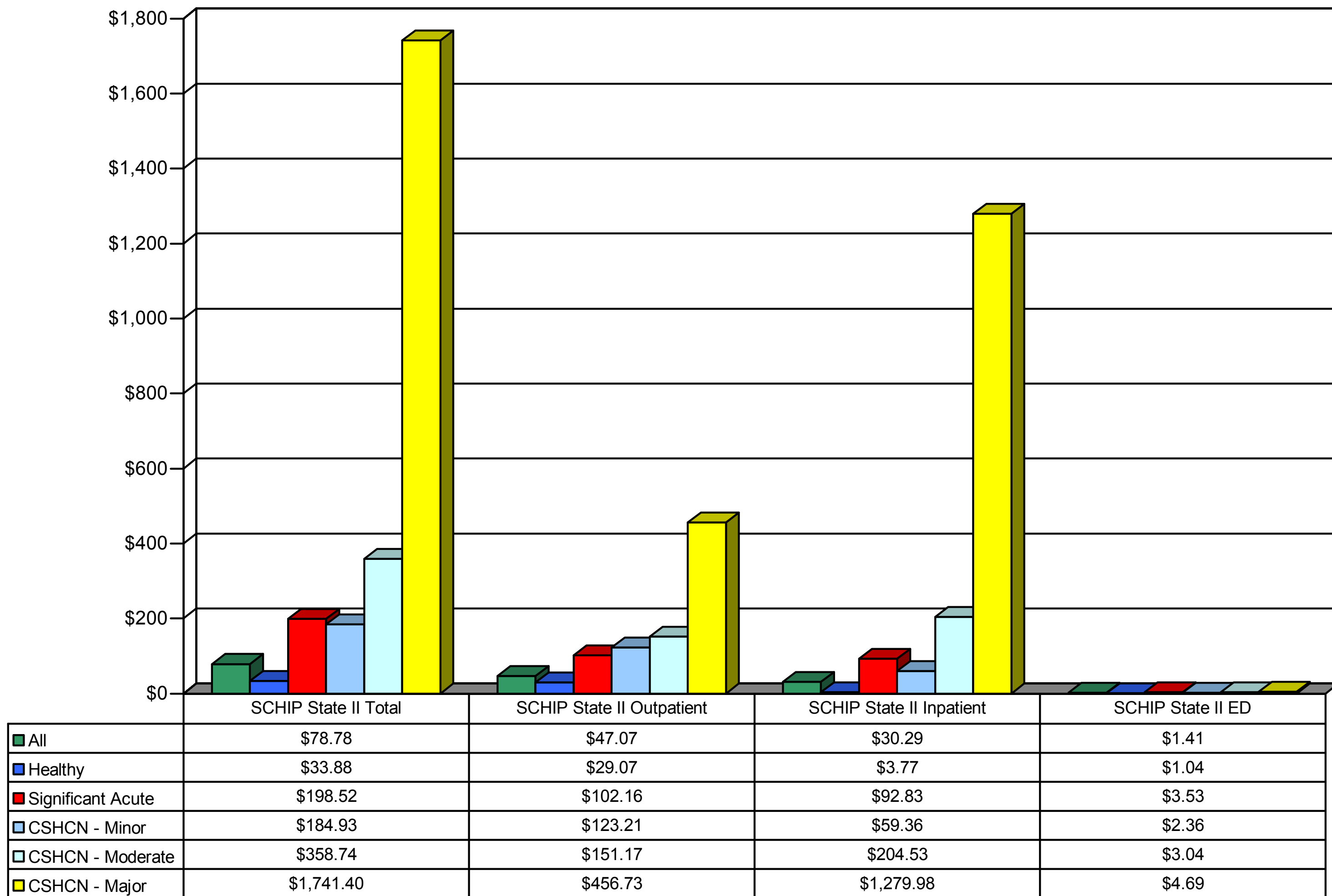
	Healthy	Significant Acute	Chronic
Medicaid State II	34.00%	28.00%	38.00%
SCHIP State II	35.00%	20.00%	44.00%

CHART 3-6. Per Member Per Month (PMPM) Expenditures in a Medicaid Program By Expanded CRG Categories, Example, State II.



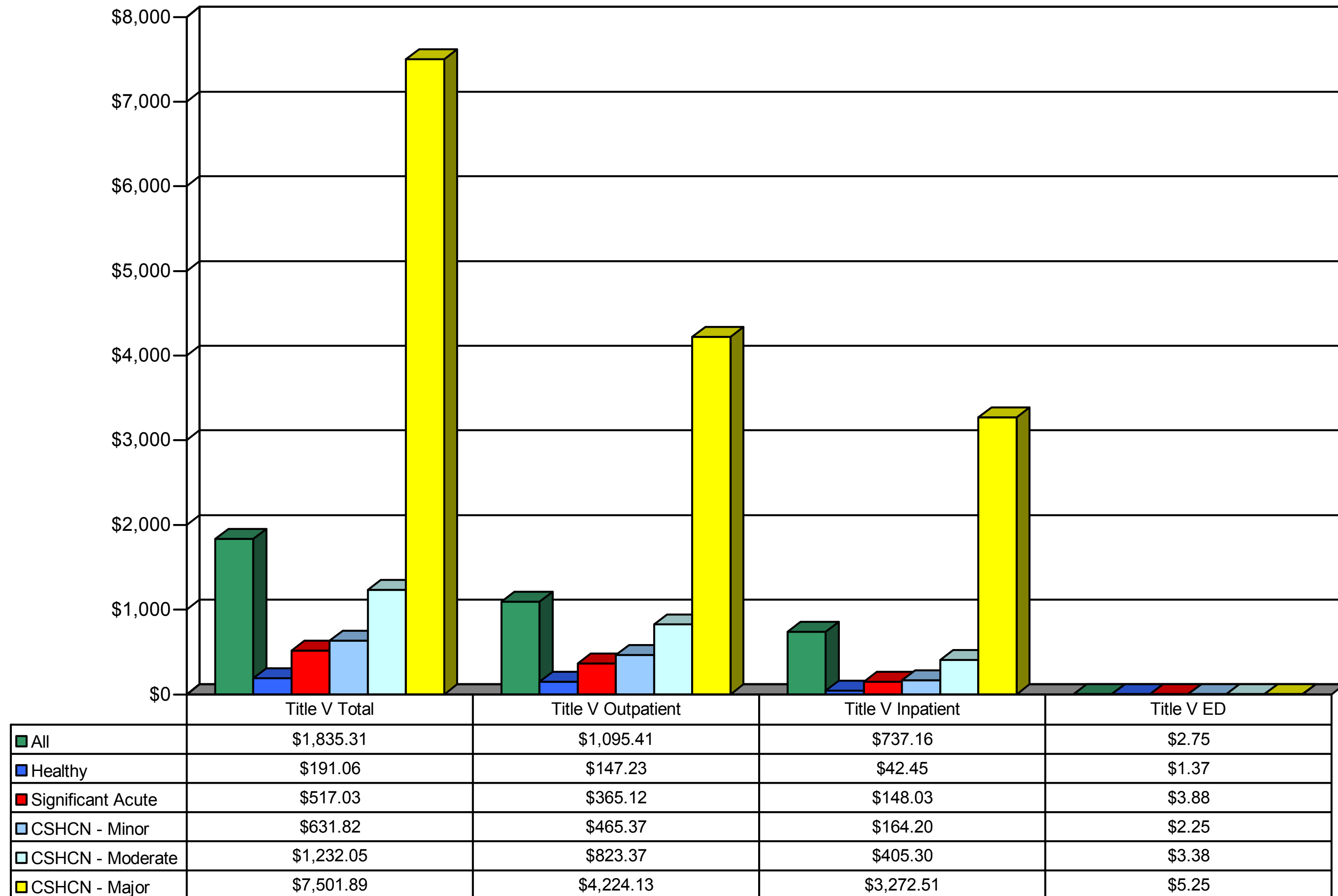
	Medicaid State II Total	Medicaid State II Outpatient	Medicaid State II Inpatient	Medicaid State II ED
All	$114.01	$35.49	$75.38	$3.14
Healthy	$48.38	$21.63	$24.71	$2.06
Signficant Acute	$311.84	$75.24	$228.06	$8.53
CSHCN - Minor	$328.24	$100.24	$222.05	$5.95
CSHCN - Moderate	$333.26	$99.01	$227.28	$6.97
CSHCN - Major	$2,426.18	$334.86	$2,081.82	$10.49

CHART 3-7. Per Member Per Month (PMPM) Expenditures in SCHIP By Expanded CRG Categories, Example State II.



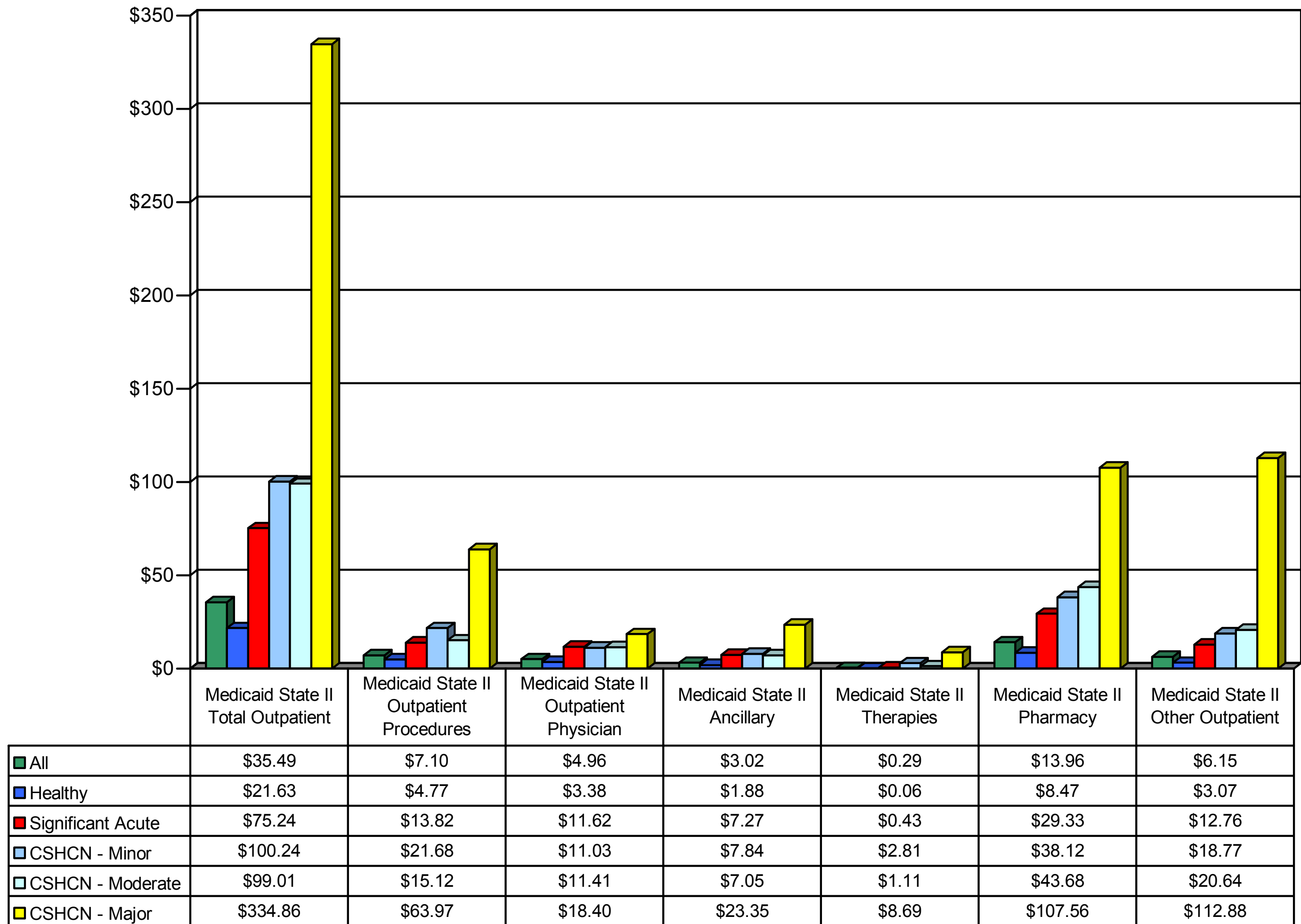
	SCHIP State II Total	SCHIP State II Outpatient	SCHIP State II Inpatient	SCHIP State II ED
All	$78.78	$47.07	$30.29	$1.41
Healthy	$33.88	$29.07	$3.77	$1.04
Significant Acute	$198.52	$102.16	$92.83	$3.53
CSHCN - Minor	$184.93	$123.21	$59.36	$2.36
CSHCN - Moderate	$358.74	$151.17	$204.53	$3.04
CSHCN - Major	$1,741.40	$456.73	$1,279.98	$4.69

CHART 3-8. Per Member Per Month (PMPM) Expenditures in a Title V Program By Expanded CRG Categories



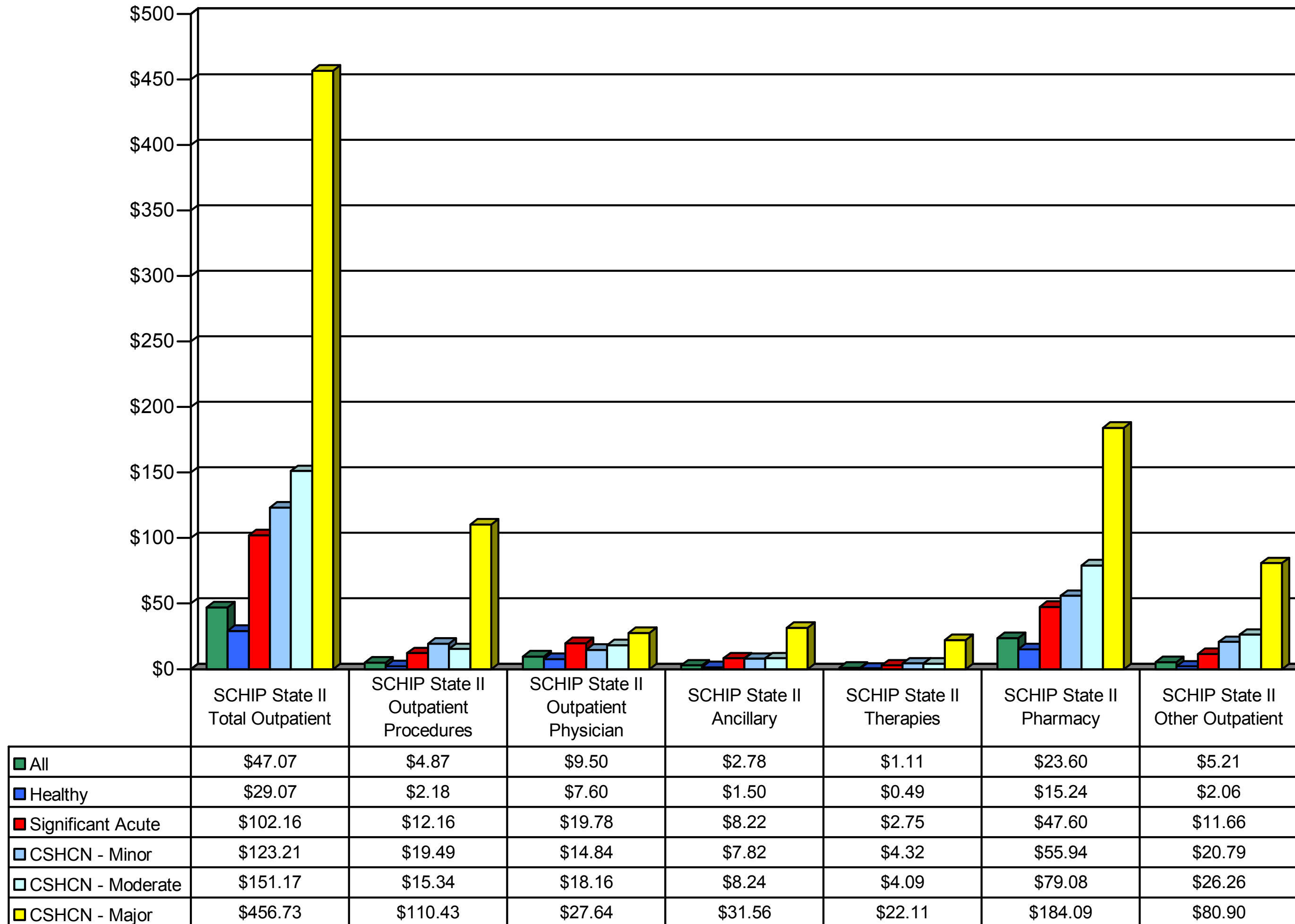
	Title V Total	Title V Outpatient	Title V Inpatient	Title V ED
All	$1,835.31	$1,095.41	$737.16	$2.75
Healthy	$191.06	$147.23	$42.45	$1.37
Significant Acute	$517.03	$365.12	$148.03	$3.88
CSHCN - Minor	$631.82	$465.37	$164.20	$2.25
CSHCN - Moderate	$1,232.05	$823.37	$405.30	$3.38
CSHCN - Major	$7,501.89	$4,224.13	$3,272.51	$5.25

CHART 3-9. Per Member Per Month (PMPM) Outpatient Expenditures in Medicaid State II By Expanded CRG Categories



	Medicaid State II Total Outpatient	Medicaid State II Outpatient Procedures	Medicaid State II Outpatient Physician	Medicaid State II Ancillary	Medicaid State II Therapies	Medicaid State II Pharmacy	Medicaid State II Other Outpatient
All	$35.49	$7.10	$4.96	$3.02	$0.29	$13.96	$6.15
Healthy	$21.63	$4.77	$3.38	$1.88	$0.06	$8.47	$3.07
Significant Acute	$75.24	$13.82	$11.62	$7.27	$0.43	$29.33	$12.76
CSHCN - Minor	$100.24	$21.68	$11.03	$7.84	$2.81	$38.12	$18.77
CSHCN - Moderate	$99.01	$15.12	$11.41	$7.05	$1.11	$43.68	$20.64
CSHCN - Major	$334.86	$63.97	$18.40	$23.35	$8.69	$107.56	$112.88

CHART 3-10. Per Member Per Month (PMPM) Outpatient Expenditures in SCHIP State II By Expanded CRG Categories



	SCHIP State II Total Outpatient	SCHIP State II Outpatient Procedures	SCHIP State II Outpatient Physician	SCHIP State II Ancillary	SCHIP State II Therapies	SCHIP State II Pharmacy	SCHIP State II Other Outpatient
All	$47.07	$4.87	$9.50	$2.78	$1.11	$23.60	$5.21
Healthy	$29.07	$2.18	$7.60	$1.50	$0.49	$15.24	$2.06
Significant Acute	$102.16	$12.16	$19.78	$8.22	$2.75	$47.60	$11.66
CSHCN - Minor	$123.21	$19.49	$14.84	$7.82	$4.32	$55.94	$20.79
CSHCN - Moderate	$151.17	$15.34	$18.16	$8.24	$4.09	$79.08	$26.26
CSHCN - Major	$456.73	$110.43	$27.64	$31.56	$22.11	$184.09	$80.90

SECTION 4: How To Use These Data

Families

Families may want to use this information to enhance their knowledge about the CSHCN's health care use and expenditures. These profiles provide information about the substantial numbers of CSHCN and the intensity of their health care needs. This information is useful in discussion with state program administrators or with managed care plan administrators about the number of CSHCN in their pediatric enrollee population.

State Program Administrators

State Program Administrators (Title V, XIX, and XXI) may want to use this information for comparison with the population of children enrolled in their state programs. In addition, these profiles provide information that can be used to develop approaches for identifying CSHCN within the state programs and for developing reimbursement strategies for children, especially CSHCN.

Health Plan Administrators

Health Plan Administrators may want to use this information for comparison with the population of children enrolled in their health plans. In addition, these profiles provide information that can be used to develop approaches for identifying CSHCN for care management or care coordination services, and for assessing health care expenditures for this group of children.

Providers

Health care providers may use this information to understand more about the types of services that CSHCN use and the associated expenditures. This information also can be used to examine differences in children's use and expenditures based on their condition classifications.

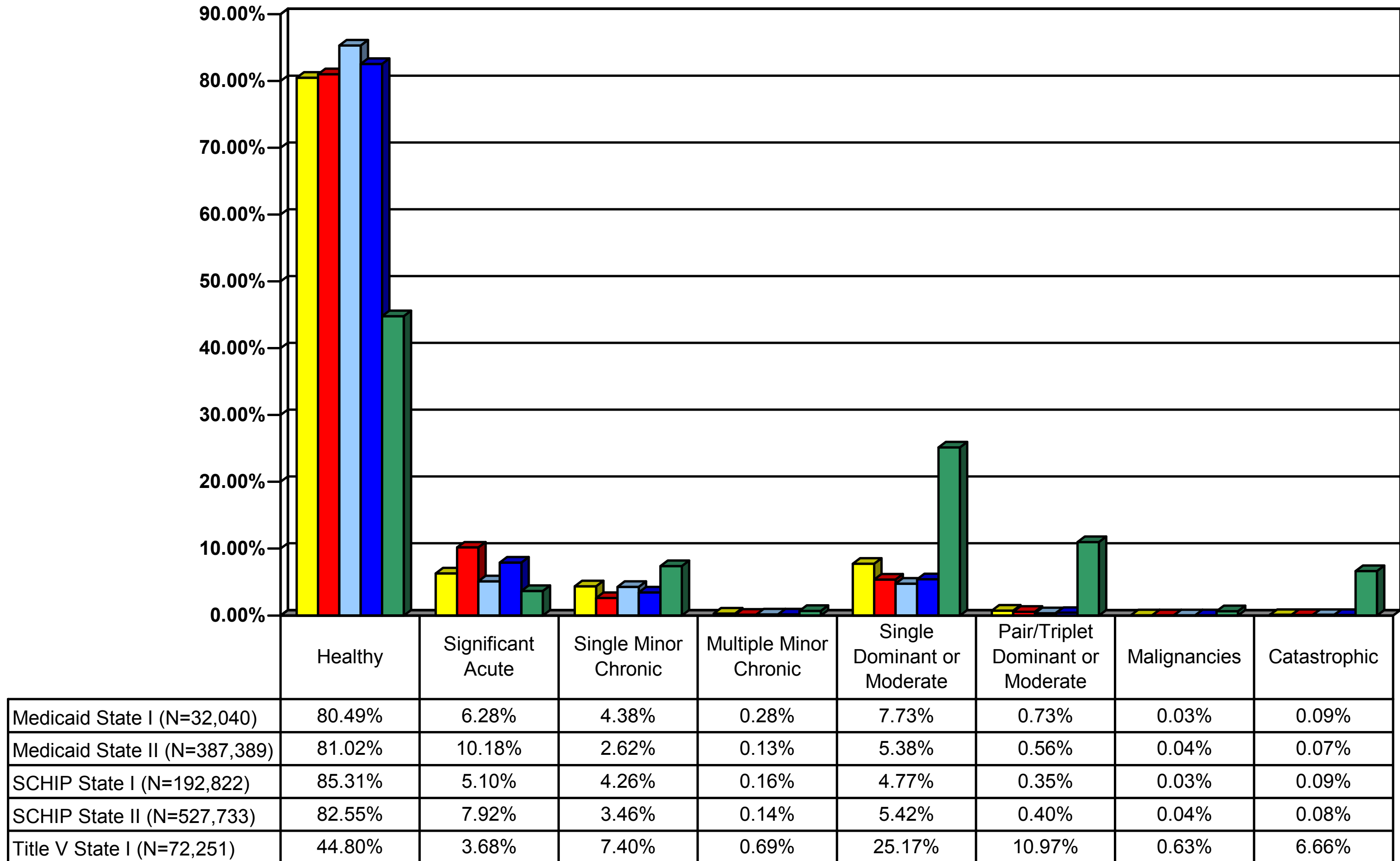
Health Services Researchers

Health Services Researchers may want to use this information for comparison purposes in studies that they are conducting.

APPENDIX A

Additional Identification of CSHCN Information for ALL CRG Health Status Categories

Chart A -1 What is the Distribution of Pediatric Enrollees in Medicaid, SCHIP, and Title V Programs by All CRG Categories?



	Healthy	Significant Acute	Single Minor Chronic	Multiple Minor Chronic	Single Dominant or Moderate	Pair/Triplet Dominant or Moderate	Malignancies	Catastrophic
Medicaid State I (N=32,040)	80.49%	6.28%	4.38%	0.28%	7.73%	0.73%	0.03%	0.09%
Medicaid State II (N=387,389)	81.02%	10.18%	2.62%	0.13%	5.38%	0.56%	0.04%	0.07%
SCHIP State I (N=192,822)	85.31%	5.10%	4.26%	0.16%	4.77%	0.35%	0.03%	0.09%
SCHIP State II (N=527,733)	82.55%	7.92%	3.46%	0.14%	5.42%	0.40%	0.04%	0.08%
Title V State I (N=72,251)	44.80%	3.68%	7.40%	0.69%	25.17%	10.97%	0.63%	6.66%

Table A-1. What are the Severity Levels within the CRG Categories for Pediatric Enrollees in a State Medicaid Program, State 1.

	Levels of Severity					Totals	
Status	**0**	**1**	**2**	**3**	**4-6**	**#**	**%**
Healthy	25,789					25,789	80.5%
Significantly Acute	2,011					2,011	6.3%
Single Minor Chronic		1,180	222			1,402	4.4%
Multiple Minor Chronic		52	1	36		89	0.3%
Single Dominant or Moderate Chronic		1,685	613	174	4	2,476	7.7%
Pairs Dominant or Moderate Chronic		165	42	23	3	233	0.7%
Triplet Dominant or Moderate Chronic		1	0	0	0	1	0.00%
Malignancies		1	6	4	0	11	0.03%
Catastrophic		5	16	6	1	28	0.09%
Totals by Level of Severity	27,800	3,089	900	243	8	32,040	100.00%
Pct. Distribution by Level of Severity	86.77%	9.64%	2.81%	0.76%	0.02%	100.00%	

Table A-2. What are the Severity Levels within the CRG Categories for Pediatric Enrollees in a SCHIP Program, State I.

	Levels of Severity					Totals	
Status	**0**	**1**	**2**	**3**	**4-6**	**#**	**%**
Healthy	164,494					164,494	85.31%
Significantly Acute	9,827					9,827	5.10%
Single Minor Chronic		7,604	601			8,205	4.26%
Multiple Minor Chronic		246	7	52		305	0.16%
Single Dominant or Moderate Chronic		6,859	1,768	547	25	9,199	4.77%
Pair Dominant or Moderate Chronic		457	136	69	8	670	0.35%
Triplet Dom. Or Moderate Chronic		1	1	0	1	3	0.00%
Malignancies		7	22	20	0	49	0.03%
Catastrophic		38	16	15	1	70	0.04%
Totals by Level of Severity	174,321	15,212	2,551	703	35	192,822	100.00%
Pct. Distribution by Level of Severity	90.41%	7.89%	1.32%	0.36%	0.02%	100.00%	

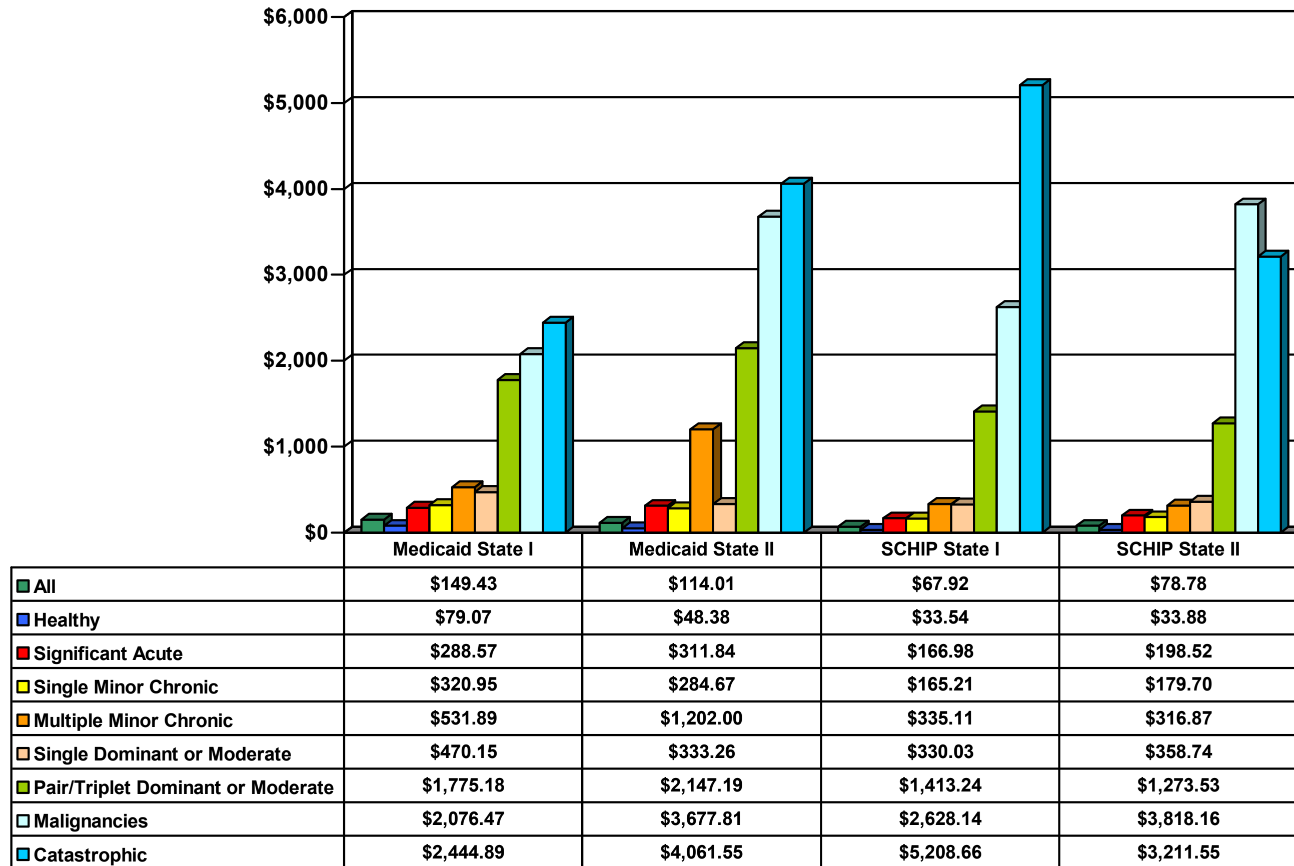
Table A-3. What are the Severity Levels within the CRG Categories for Pediatric Enrollees in a State Title V Program, State 1.

	Levels of Severity					Totals	
Status	**0**	**1**	**2**	**3**	**4-6**	**#**	**%**
Healthy	32,368					32,368	44.8%
Significantly Acute	2,661					2,661	3.7%
Single Minor Chronic		4,836	513			5,349	7.4%
Multiple Minor Chronic		354	22	121		497	.7%
Single Dominant or Moderate Chronic		11,259	5,186	1,516	226	18,187	25.2%
Pairs and triplets Dominant or Moderate Chronic		4,152	1,632	1,514	625	7,923	10.9%
Malignancies		27	172	245	10	454	.1%
Catastrophic		898	1,893	1,782	239	4,812	6.7%
Totals by Level of Severity	35,029	21,526	9,418	5,178	1,100	72,251	100.0%
Pct. Distribution by Level of Severity	48.48%	29.79%	13.04%	7.17%	1.52%	100.00%	

APPENDIX B

Additional Expenditure Information
For ALL CRG Health Status Categories

Chart B-1 Per Member Per Month (PMPM) Total Expenditures in Medicaid and SCHIP By All CRG Categories



	Medicaid State I	Medicaid State II	SCHIP State I	SCHIP State II
All	$149.43	$114.01	$67.92	$78.78
Healthy	$79.07	$48.38	$33.54	$33.88
Significant Acute	$288.57	$311.84	$166.98	$198.52
Single Minor Chronic	$320.95	$284.67	$165.21	$179.70
Multiple Minor Chronic	$531.89	$1,202.00	$335.11	$316.87
Single Dominant or Moderate	$470.15	$333.26	$330.03	$358.74
Pair/Triplet Dominant or Moderate	$1,775.18	$2,147.19	$1,413.24	$1,273.53
Malignancies	$2,076.47	$3,677.81	$2,628.14	$3,818.16
Catastrophic	$2,444.89	$4,061.55	$5,208.66	$3,211.55