



Institute for Child Health Policy at the University of Florida
Texas External Quality Review Organization

Children with Special Health Care Needs:

Quality of Care in the Medicaid Managed Care and Children's Health Insurance Programs in Texas

Contract Year 2011

Measurement Period:

September 1, 2009 through August 31, 2010

**The Institute for Child Health Policy
University of Florida**

**The External Quality Review Organization
for Texas Medicaid Managed Care and CHIP**

Submitted: December 2, 2011

Final Submitted:

Table of Contents

Executive Summary	1
Introduction	7
Methodology	8
Data sources and time frame	8
CSHCN identification.....	8
Quality of care indicators.....	9
Results	10
Estimates of the Numbers of CSHCN	10
Quality of Care Results	11
Children and Adolescents' Access to Primary Care Practitioners	11
Well-Child and Adolescent Well-Care Visits.....	14
AHRQ Pediatric Quality Indicator (PDI) Results.....	17
Appendix A. Pediatric Quality Indicator Tables.....	20
Endnotes.....	23

List of Tables

Table 1. CRG Health Status Categories of Children in STAR, PCCM and CHIP	10
Table 2. Children and Adolescents' Access to Primary Care Practitioners in STAR	11
Table 3. Children and Adolescents' Access to Primary Care Practitioners in PCCM	12
Table 4. Children and Adolescents' Access to Primary Care Practitioners in CHIP	13
Table 5. Well-Child and Adolescent Well-Care Visits in STAR.....	14
Table 6. Well-Child and Adolescent Well-Care Visits in PCCM.....	15
Table 7. Well-Child and Adolescent Well-Care Visits in CHIP	16
Table A1. STAR AHRQ Pediatric Quality Indicator Admission Rates.....	20
Table A2. PCCM AHRQ Pediatric Quality Indicator Admission Rates.....	21
Table A3. CHIP AHRQ Pediatric Quality Indicator Admission Rates.....	22

Executive Summary

Introduction

Children with special health care needs (CSHCN) comprise a unique group who are more susceptible than healthy children to adverse outcomes from variations in their health care, and for whom close monitoring of access to care and quality of care are important components of quality assessment.

This report presents results of studies conducted by the Institute for Child Health Policy (ICHPP) at the University of Florida – the External Quality Review Organization (EQRO) for Texas Medicaid Managed Care and the Children’s Health Insurance Program (CHIP) – to assess the quality of care for CSHCN enrolled in Texas STAR, PCCM, and CHIP during fiscal year 2010.

Methodology

The EQRO used data compiled from two sources: (1) Enrollment files containing information about the child’s age, managed care organization (MCO), and number of months enrolled in the program; and (2) Person-level claims and encounter data, which contain the information necessary to calculate quality of care indicators.

The EQRO used Clinical Risk Groups (CRGs) to identify CSHCN. The CRGs classify children into one of five health status categories: (1) Healthy; (2) Significant Acute Conditions; (3) Minor Chronic Conditions; (4) Moderate Chronic Conditions; and (5) Major Chronic Conditions.

Utilization of health services for CSHCN was assessed using three quality of care indicators based on measures from the Healthcare Effectiveness Data and Information Set (HEDIS®).

- Children and Adolescents’ Access to Primary Care Practitioners (PCPs)
- Well-Child Visits in the 3rd, 4th, 5th, and 6th Years of Life
- Adolescent Well-Care

In addition, the EQRO assessed rates of inpatient admissions for ambulatory care sensitive conditions (ACSCs) using the Agency for Healthcare Research and Quality (AHRQ) Pediatric Quality Indicators (PDIs). The PDIs provide inpatient admissions rates for asthma, diabetes short-term complications, gastroenteritis, perforated appendix, and urinary tract infection.

Summary of Findings – FY 2010

Estimates of numbers of CSHCN

	STAR	PCCM	CHIP
Number of CSHCN	199,928	164,208	71,618
Percent of child members	16%	23%	14%

Children and Adolescents' Access to Primary Care Practitioners

	Percent of CSHCN Having a PCP Visit		
	STAR	PCCM	CHIP
12 - 24 mo	99.7%	99.7%	100.0%
25 mo - 6 yrs	99.0%	98.2%	98.7%
7 - 11 yrs	99.2%	98.0%	98.9%
12 - 19 yrs	99.1%	98.3%	98.8%

- Across programs, the percentage of CSHCN in all age groups having a PCP visit during the measurement period approached 100 percent. All rates exceeded the corresponding national HEDIS® means.
- Rates of PCP visits were relatively constant across CSHCN severity groups.
- Rates of PCP visits for children with significant acute conditions in all age groups also approached 100 percent.

Well-Child and Adolescent Well-Care Visits

	Percent of CSHCN With At Least One Visit		
	STAR	PCCM	CHIP
Well-Child 3-6 yrs.	83.6%	88.8%	74.9%
Adolescent Well-Care	70.2%	77.5%	59.1%

- In STAR and PCCM, rates of well-child visits for CSHCN three to six years old and rates of adolescent well-care visits for CSHCN greatly exceeded the corresponding national HEDIS® means (72 percent and 48 percent, respectively). The rates in CHIP were also greater than the national HEDIS® means. However, in light of disparities between CHIP and the other programs and the special needs of this population, improvement in well-child and adolescent well-care visits in CHIP is warranted.

AHRQ PDI – Inpatient Admission Rates for Selected ACSCs

	PDI Rate for CSHCN ^a		
	STAR	PCCM	CHIP
Asthma	875.0	783.6	638.5
Diabetes short-term complications	191.7	140.4	165.1
Gastroenteritis	172.0	445.4	154.7
Perforated appendix	39.6	35.7	39.7
Urinary tract infection	128.3	227.2	89.3

^a Rates are per 100,000 admissions, except for Perforated Appendix, which is per 100 member admitted with appendicitis.

- Among the three programs, CSHCN in STAR had the highest admission rates for asthma and diabetes short-term complications.
- Among the three programs, CSHCN in PCCM had the highest admission rates for gastroenteritis and urinary tract infection.
- In comparison to AHRQ national estimates, CSHCN with major chronic conditions had particularly high rates of admission for diabetes short-term complications – 31 times the national rate in STAR, 19 times the national rate in PCCM, and 28 times the national rate in CHIP. These findings strongly suggest a need for improved outpatient care for CSHCN with diabetes to address these types of costly and potentially preventable admissions.

Recommendations

The EQRO recommends the following strategies to Texas HHSC and MCOs participating in Medicaid Managed Care and CHIP for improving the delivery and quality of care for children with special health care needs.

Domain	Recommendations	Rationale	HHSC Recommendations/ Response
Diabetes care for CSHCN	<ul style="list-style-type: none"> • Improving access to and quality of outpatient care for diabetes will decrease rates not only of potentially 	Admissions for diabetes short-term complications for CSHCN with major conditions considerably exceeded the AHRQ national rate in all	MCOs are contractually obligated to provide or arrange the provision of comprehensive disease management services. One of HHSC's 2012

	<p>preventable hospitalizations, but also of potentially preventable emergency department admissions.</p> <ul style="list-style-type: none"> • Medicaid and CHIP MCOs should consider implementing strategies that have been proven to decrease ED use for children with chronic conditions, including: <ul style="list-style-type: none"> ○ Enhanced care coordination services that are based on the medical home model: Following the Pediatric Medical Home Project at the University of California Los Angeles, elements may include: (1) a comprehensive clinical and social evaluation, (2) extended follow-up appointments, 	<p>programs.</p>	<p>overarching goals in STAR and CHIP is to improve treatment for ambulatory care sensitive conditions (ACSCs) in five areas – asthma, diabetes short-term complications, gastroenteritis, urinary tract infection, and perforated appendix – through reduction of emergency department visits.</p> <p>Ambulatory care, both outpatient and emergency department, is included in the 2012 Quality Challenge Award measures.</p> <p>AHRQ Pediatric Quality Indicators for members less than 18 years old are part of the HHSC Performance Dashboard quality measures. These measures are used to evaluate program-level performance on rates of inpatient admissions for ACSCs.</p>
--	--	------------------	--

	<p>(3) access to a “family liaison”, and (4) a family notebook that includes the patient’s medical records, physician names and contact information, and a list of the patient’s medications.¹</p>		
<p>Utilization of well-child and adolescent well-care visits in CHIP</p>	<ul style="list-style-type: none"> • One of HHSC’s Overarching Goals for CHIP in fiscal year 2011 is to increase access to or utilization of preventive care. CHIP MCOs should consider performance improvement projects that address this topic for CSHCN, particularly those in higher risk groups. • CSHCN in CHIP will benefit from an increased emphasis on the medical home, modeled after the care provided to children in Texas Medicaid through Texas 	<p>CHIP members, both healthy and CSHCN, had lower rates of well-child and adolescent well-care visits than their counterparts in STAR and PCCM.</p> <p>Although rates in CHIP exceeded national averages, the lifting of provider constraints for these measures likely overestimates the program’s performance and indicates there is room for improvement in providing check-ups and preventive screenings to CSHCN in CHIP.</p>	<p>As part of the Calendar Year 2013 5% At-Risk measures, MCO performance will be evaluated for well-child visits in 3, 4, 5, and 6 years of life and for adolescent well-care visits.</p> <p>Well-child and adolescent well-care visits are monitored through the HHSC Performance Dashboard for Quality Measures. Performance measures are evaluated annually and compared to HHSC-established standards as well as national benchmarks.</p> <p>ICHP captures elements of the patient-centered home through the CAHPS Surveys and HEDIS measures, which HHSC uses in the development and annual</p>

	<p>Health Steps. In particular, there is evidence that family-centered care (FCC), which is an essential component of the medical home, is associated with improvements in efficient use of services, health status, satisfaction, access to care, communication, systems of care, family functioning, and family impact/cost for CSHCN.²</p>		<p>review of MCO performance standards.</p>
--	--	--	---

Introduction

Children with special health care needs (CSHCN) comprise an estimated 14 percent of children nationally and 13 percent of children in Texas.³ The Federal Maternal and Child Health Bureau defines *Children with Special Health Care Needs* as “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.” Specifically, this includes children who are at an increased biological risk (such as low birth weight) or environmental risk (such as extreme poverty or child abuse/neglect), who require specialized services (including enhanced medical services, therapeutic services, family support services, equipment/supplies, and related services such as early intervention), and who require services of a type or level that exceeds that needed by children generally.⁴ CSHCN have a wide range of conditions from asthma to childhood cancer, and represent a unique group who may be more susceptible than healthy children to adverse outcomes from variations in health care.

Eighteen percent of CSHCN are reported to have unmet health needs, while one-third lack critical elements of family-centered health care.⁵ Among CSHCN, those who are low-income and whose parents have less than a high school education are more likely to have unmet needs for health services.⁶ In addition, CSHCN who are Hispanic or African-American are less likely to obtain the health care they need.⁷ The National Survey of Children’s Health has reported that a sizeable minority (29 percent) of the CSHCN population in Texas is covered under Medicaid and CHIP.⁸ Since Texas Medicaid and CHIP represent a diverse ethnic and socioeconomic population, CSHCN in these programs may be particularly vulnerable to suboptimal health care. It is therefore essential to regularly monitor their access to and quality of care.

This report presents results from studies by the Institute for Child Health Policy (IHP) – the External Quality Review Organization (EQRO) for Texas Medicaid Managed Care and CHIP – assessing the quality of care for CSHCN enrolled in Texas STAR, PCCM, and CHIP during fiscal year 2010. The purpose of this report is to provide an update on administrative quality of care measures using the most recent available data. Specifically, the report describes the following:

- Access to and utilization of care received by CSHCN in STAR, PCCM, and CHIP for the following performance measures, based on measures in the Healthcare Effectiveness Data and Information Set (HEDIS[®]): (1) Children and Adolescents’ Access to Primary Care Practitioners, (2) Well-Child Visits in the 3rd, 4th, 5th, and 6th Years of Life, and (3) Adolescent Well-Care Visits.
- The rates of inpatient admission for asthma, diabetes short-term complications, gastroenteritis, urinary tract infection, and perforated appendix using the Agency for Healthcare Research and Quality (AHRQ) Pediatric Quality Indicators (PDIs) specifications for CSHCN in STAR, PCCM, and CHIP.

Methodology

Data sources and time frame

This report includes data from two sources:

- (1) Enrollment files containing information about the child's age, the managed care organization (MCO) in which the child was enrolled, and the number of months the child was enrolled in the program. These files were used to assess whether children met the enrollment criteria necessary to be included in the calculation of quality of care measures presented in this report.
- (2) Person-level claims and encounter data, which were provided to the EQRO by the Texas Health and Human Services Commission (HHSC) and the MCOs participating in Texas Medicaid Managed Care and CHIP. The person-level claims and encounter data contain Physician's Current Procedural Terminology (CPT) codes, International Classification of Diseases, 9th Revision, Clinical Modification (ICD 9-CM) codes, place of service (POS) codes, and other information needed to calculate the indicators presented in this report.

The measures included in this report require at least one year of health care claims and encounter data for their calculations. For this report, the time frame used was fiscal year 2010 (September 1, 2009 through August 31, 2010).

CSHCN identification

The EQRO used Clinical Risk Groups (CRGs) to classify children according to health status.⁹ The advantage of this approach is that it uses diagnoses given by providers at the time of health care encounters and is likely to accurately reflect the child's health status.¹⁰ CRGs use more than 2,000 ICD-9-CM codes and some CPT codes from all health care encounters to assign members to one of five health status categories:

- 1) **Healthy** members who had no medical encounters during the measurement period or were seen only for routine care.
- 2) **Significant Acute Conditions**, including illnesses or injuries, such as head injury with coma or meningitis, which could place a child at risk for developing a chronic condition.
- 3) **CSHCN – Minor**, including illnesses that can usually be managed effectively with few complications, such as hearing loss or attention deficit/hyperactivity disorder (ADHD).
- 4) **CSHCN – Moderate**, involving illnesses that vary in severity and progression, can be complicated, and require extensive care, such as asthma, epilepsy, or major depression.
- 5) **CSHCN – Major**, referring to serious illnesses that often result in progressive deterioration, debilitation, and death, such as active malignancies or cystic fibrosis.

To ensure a sufficient diagnostic history for accurate classification, children one year of age and older had to be enrolled in the program or MCO for at least six months, and those under one year of age had to be enrolled for at least three months.

Quality of care indicators

The EQRO assessed the access and utilization of health care for CSHCN and non-CSHCN using the following administrative quality of care measures:

- Children and Adolescents' Access to Primary Care Practitioners (PCPs)
- Well-Child Visits in the 3rd, 4th, 5th, and 6th Years of Life
- Adolescent Well-Care Visits
- AHRQ PDI – Asthma
- AHRQ PDI – Diabetes Short-Term Complications
- AHRQ PDI – Gastroenteritis
- AHRQ PDI – Perforated Appendix
- AHRQ PDI – Urinary Tract Infection

The measures assessing access to PCPs and utilization of well-child and well-care visits are based on HEDIS[®] measures of the same name, and were calculated using National Committee for Quality Assurance (NCQA) certified software. Discussion of results in this report includes comparisons to HEDIS[®] national Medicaid rates, which are derived from rates reported to the NCQA by Medicaid Managed Care plans nationally.¹¹ Because health plans submit HEDIS[®] data to the NCQA on a voluntary basis, those included in the national Medicaid rates may not be fully representative of the industry, which should be considered when interpreting comparisons with the findings of this report.¹²

At the request of HHSC, the EQRO developed a methodology to allow for flexibility in the provider specialty codes when determining eligibility for Children and Adolescents' Access to PCPs, Well-Child Visits in the 3rd, 4th, 5th, and 6th Years of Life, and Adolescent Well-Care Visits. Provider specialty codes are an important component for these measures and lifting the provider constraints may result in some inflation of rates. For example, NCQA specifications require that a PCP be the provider of record for a member to be compliant with Children and Adolescents' Access to PCPs. The revised methodology allows any visit with a physician provider to count toward compliance for this measure.¹³ All other HEDIS[®] technical specifications were followed.

The AHRQ PDIs were used to evaluate program-level performance on rates of inpatient admissions for the following ambulatory care sensitive conditions (ACSCs): Asthma, Diabetes Short-Term Complications, Gastroenteritis, Perforated Appendix, and Urinary Tract Infection.¹⁴ The AHRQ considers ACSCs to be “conditions for which good outpatient care can potentially

prevent the need for hospitalization or for which early intervention can prevent complications or more severe disease.”¹⁵ Rates of inpatient admissions for ACSCs may therefore be seen as indicators of access to outpatient care. Unlike most other performance measures, low PDI rates are desired, as they suggest a better quality health care system outside the hospital setting. All PDI rates are calculated per 100,000 hospital admissions, except for Perforated Appendix, which is calculated per 100 admissions for appendicitis. Discussion of PDI rates in this report includes comparisons with national rates reported by AHRQ.¹⁶ It should be noted that the AHRQ national estimates are based on data collected in 2008 and are area-level indicators, including commercial and Medicaid populations.

Results

Estimates of the Numbers of CSHCN

Table 1 contains a summary of the health status of children in STAR, PCCM, and CHIP for fiscal year 2010 using the CRGs. The numbers of children represent those who met the enrollment criteria for classification (i.e., six months enrollment for those one year of age or older and three months of enrollment for those under 12 months old). Children listed as “unassigned” are those who did not have sufficient enrollment times in the program to be classified into a health status category.

Table 1. CRG Health Status Categories of Children in STAR, PCCM and CHIP

Health Status	STAR			PCCM			CHIP		
	N	% of total	% of classified	N	% of total	% of classified	N	% of total	% of classified
Healthy	890,490	71.2%	71.5%	444,727	62.2%	62.4%	400,168	78.3%	78.3%
Significant Acute	155,374	12.4%	12.5%	103,532	14.5%	14.5%	39,165	7.7%	7.7%
CSHCN – Minor	61,074	4.9%	4.9%	59,556	8.3%	8.4%	26,351	5.2%	5.2%
CSHCN – Moderate	118,125	9.4%	9.5%	81,776	11.4%	11.5%	38,981	7.6%	7.6%
CSHCN – Major	20,729	1.7%	1.7%	22,876	3.2%	3.2%	6,286	1.2%	1.2%
Unassigned	4,631	0.4%	--	2,305	0.3%	--	148	0.0%	--
Total	1,250,423	100.0%	100.0%	714,772	100.0%	100.0%	511,099	100.0%	100.0%

For all three programs, percentages of children in each CRG are presented for the total sample (“unassigned” children included) and among those children who could be classified (“unassigned” children excluded). The denominators used for the percentages of children who could be classified were 1,245,792 for STAR, 712,467 for PCCM, and 510,951 for CHIP.

Combining the three CSHCN CRG categories (minor, moderate, and major) and excluding children who could not be classified, 16.1 percent of children in STAR, 23.1 percent of children in PCCM, and 14.0 percent of children in CHIP were classified as having special health care needs using claims and encounter data.

Quality of Care Results

The quality of care results are presented in the following tables, stratified by CRG health status category. The measurement period is September 1, 2009 through August 31, 2010 for all measures.

Children and Adolescents’ Access to Primary Care Practitioners

Table 2 shows the percentage of children and adolescents in STAR who had one or more visits with a physician provider for preventive or ambulatory care services during the measurement period. The percentage of children and adolescents who saw a physician provider was high overall, ranging from 95 percent among children 25 months to six years old and adolescents 12 to 19 years old, to 98 percent among children 12 to 24 months old. Generally, as the children’s health status declined, the percentage seeing a physician increased.

Table 2. Children and Adolescents' Access to Primary Care Practitioners in STAR

CRG Category	Child Age							
	12 to 24 months		25 months to 6 years		7 to 11 years		12 to 19 years	
	# Compliant # Eligible	Percent						
Healthy	<u>35,710</u> 36,652	97.4%	<u>150,721</u> 162,673	92.7%	<u>52,550</u> 55,734	94.3%	<u>46,634</u> 50,155	93.0%
Significant acute	<u>15,321</u> 15,404	99.5%	<u>36,589</u> 36,966	99.0%	<u>8,351</u> 8,400	99.4%	<u>6,579</u> 6,634	99.2%
CSHCN – Minor	<u>2,135</u> 2,143	99.6%	<u>11,498</u> 11,640	98.8%	<u>5,791</u> 5,865	98.7%	<u>5,227</u> 5,269	99.2%
CSHCN – Moderate	<u>6,409</u> 6,425	99.8%	<u>26,027</u> 26,304	98.9%	<u>10,023</u> 10,079	99.4%	<u>8,659</u> 8,753	98.9%
CSHCN – Major	<u>1,102</u> 1,108	99.5%	<u>3,357</u> 3,368	99.7%	<u>1,760</u> 1,769	99.5%	<u>2,267</u> 2,275	99.6%
Unassigned	<u>0</u> 0	0.0%	<u>0</u> 0	0.0%	<u>0</u> 0	0.0%	<u>0</u> 0	0.0%

Total	<u>60,677</u> 61,732	98.3%	<u>228,192</u> 240,951	94.7%	<u>78,475</u> 81,847	95.9%	<u>69,366</u> 73,086	94.9%
-------	-------------------------	-------	---------------------------	-------	-------------------------	-------	-------------------------	-------

Grouping all CSHCN categories (minor, moderate, and major), 84,998 STAR members 12 months to 19 years old were identified as having special health care needs and were eligible for this measure, among whom 84,225 (99 percent) saw a physician provider during the measurement period. CSHCN in the younger age groups had higher rates, with nearly 100 percent of CSHCN age 12 to 24 months old seeing a physician provider. Rates of seeing a physician provider were also 99 to 100 percent among CSHCN with major conditions in all age groups.

Rates for this measure among children and adolescents in STAR with significant acute conditions and those with special health care needs exceeded the national HEDIS® means in all age categories: 12 to 24 months (95.2 percent), 25 months to 6 years (88.3 percent), 7 to 11 years (90.3 percent), and 12 to 19 years (87.9 percent).

Table 3 shows the percentage of children and adolescents in the PCCM Program who had one or more visits with a physician provider for preventive or ambulatory care services during the measurement period. The percentage of children and adolescents was high overall, ranging from 95 percent among children 25 months to 6 years old to 99 percent among children 12 to 24 months old. Generally, as the children's health status declined, the percentage seeing a physician increased.

Table 3. Children and Adolescents' Access to Primary Care Practitioners in PCCM

CRG Category	Child Age							
	12 to 24 months		25 months to 6 years		7 to 11 years		12 to 19 years	
	# Compliant # Eligible	Percent	# Compliant # Eligible	Percent	# Compliant # Eligible	Percent	# Compliant # Eligible	Percent
Healthy	<u>18,085</u> 18,512	97.7%	<u>68,496</u> 74,690	91.7%	<u>26,753</u> 28,458	94.0%	<u>26,714</u> 28,317	94.3%
Significant acute	<u>10,619</u> 10,667	99.6%	<u>23,623</u> 24,055	98.2%	<u>6,953</u> 7,026	99.0%	<u>5,299</u> 5,371	98.7%
CSHCN – Minor	<u>1,836</u> 1,840	99.8%	<u>12,436</u> 12,672	98.1%	<u>7,410</u> 7,620	97.2%	<u>6,244</u> 6,366	98.1%
CSHCN – Moderate	<u>4,177</u> 4,197	99.5%	<u>16,076</u> 16,432	97.8%	<u>8,398</u> 8,573	98.0%	<u>8,770</u> 8,942	98.1%
CSHCN – Major	<u>1,101</u> 1,102	99.9%	<u>5,244</u> 5,281	99.3%	<u>3,072</u> 3,083	99.6%	<u>3,254</u> 3,270	99.5%
Unassigned	<u>0</u> 0	0.0%	<u>2</u> 2	100.0%	<u>0</u> 0	0.0%	<u>0</u> 0	0.0%
Total	<u>35,818</u> 36,318	98.6%	<u>125,877</u> 133,132	94.6%	<u>52,586</u> 54,760	96.0%	<u>50,281</u> 52,266	96.2%

Grouping all CSHCN categories (minor, moderate, and major), 79,378 PCCM members 12 months to 19 years old were identified as having special health care needs and were eligible for this measure, among whom 78,018 (98 percent) saw a physician provider during the measurement period. CSHCN in the 12 to 24 month age group had the highest rates, with nearly 100 percent seeing a physician provider. Greater than 99 percent of CSHCN with major conditions in all age groups saw a physician provider.

Rates for this measure among children and adolescents in PCCM with significant acute conditions and those with special health care needs exceeded the national HEDIS® means in all age categories: 12 to 24 months (95.2 percent), 25 months to 6 years (88.3 percent), 7 to 11 years (90.3 percent), and 12 to 19 years (87.9 percent).

Table 4 shows the percentage of children and adolescents in CHIP who had one or more visits with a physician provider for preventive or ambulatory care services during the measurement period. The percentage of children and adolescents who saw a physician provider was high overall, ranging from 92 percent among children 25 months to six years old and adolescents 12 to 19 years old, to 94 percent among children 7 to 11 years old. Generally, as the children's health status declined, the percentage seeing a physician increased.

Table 4. Children and Adolescents' Access to Primary Care Practitioners in CHIP

CRG Category	Child Age							
	12 to 24 months		25 months to 6 years		7 to 11 years		12 to 19 years	
	# Compliant # Eligible	Percent						
Healthy	$\frac{675}{758}$	89.1%	$\frac{23,230}{26,153}$	88.8%	$\frac{28,481}{30,941}$	92.1%	$\frac{41,887}{46,627}$	89.8%
Significant acute	$\frac{231}{232}$	99.6%	$\frac{5,101}{5,165}$	98.8%	$\frac{3,959}{3,986}$	99.3%	$\frac{5,031}{5,083}$	99.0%
CSHCN – Minor	$\frac{40}{40}$	100.0%	$\frac{1,668}{1,692}$	98.6%	$\frac{2,924}{2,978}$	98.2%	$\frac{4,598}{4,671}$	98.4%
CSHCN – Moderate	$\frac{84}{84}$	100.0%	$\frac{3,179}{3,223}$	98.6%	$\frac{4,496}{4,532}$	99.2%	$\frac{6,170}{6,236}$	98.9%
CSHCN – Major	$\frac{14}{14}$	100.0%	$\frac{310}{311}$	99.7%	$\frac{676}{678}$	99.7%	$\frac{1,394}{1,404}$	99.3%
Unassigned	$\frac{0}{0}$	0.0%	$\frac{0}{0}$	0.0%	$\frac{0}{0}$	0.0%	$\frac{0}{0}$	0.0%
Total	$\frac{1,044}{1,128}$	92.6%	$\frac{33,488}{36,544}$	91.6%	$\frac{40,536}{43,115}$	94.0%	$\frac{59,080}{64,021}$	92.3%

Grouping all CSHCN categories (minor, moderate, and major), 25,863 CHIP members 12 months to 19 years old were identified as having special health care needs, among whom 25,553 (99 percent) saw a physician provider during the measurement period. CSHCN in the younger age groups had higher rates, with 100 percent of CSHCN age 12 to 24 months old

seeing a physician provider.¹⁷ Rates of seeing a physician provider were also nearly 100 percent among CSHCN with major conditions in all age groups.

Rates for this measure among children and adolescents in CHIP with significant acute conditions and those with special health care needs exceeded the national HEDIS[®] means in all age categories: 12 to 24 months (95.2 percent), 25 months to 6 years (88.3 percent), 7 to 11 years (90.3 percent), and 12 to 19 years (87.9 percent).

Well-Child and Adolescent Well-Care Visits

Table 5 shows results for well-child visits in the 3rd, 4th, 5th, and 6th years of life and adolescent well-care visits for STAR. Overall, 80 percent of children 3 to 6 years old had one or more well-child visits, and 63 percent of adolescents had one or more well-care visits during the measurement period. They also exceed the national HEDIS[®] means for these measures (72 percent and 48 percent, respectively). Although rates presented for STAR are inflated due to lifting of provider constraints, performance on these measures is likely comparable to that reported nationally.

Table 5. Well-Child and Adolescent Well-Care Visits in STAR

	One or More Well-Child Visits in 3 rd , 4 th , 5 th , and 6 th Years of Life		One or More Adolescent Well-Care Visits	
	<u># Compliant</u> <u># Eligible</u>	Percent	<u># Compliant</u> <u># Eligible</u>	Percent
Healthy	<u>101,822</u> 131,734	77.3%	<u>57,769</u> 96,547	59.8%
Significant Acute	<u>23,158</u> 27,162	85.3%	<u>8,891</u> 12,459	71.4%
CSHCN – Minor	<u>8,184</u> 9,669	84.6%	<u>6,571</u> 9,582	68.6%
CSHCN – Moderate	<u>17,471</u> 21,022	83.1%	<u>11,293</u> 15,877	71.1%
CSHCN – Major	<u>2,197</u> 2,627	83.6%	<u>2,812</u> 3,981	70.6%
Unassigned	<u>0</u> 0	0.0%	<u>0</u> 0	0.0%
Total	<u>152,832</u> 192,214	79.5%	<u>87,336</u> 138,446	63.1%

Among healthy children ages 3 to 6 years old in STAR, 77 percent had one or more well-child visits during the measurement period. The percentage of children having one or more well-child visits was higher for those in other CRG categories, ranging from 83 percent to 85 percent among CSHCN, and 85 percent among children with significant acute conditions.

Among adolescents classified as healthy in STAR, 60 percent had one or more visits for adolescent well-care during the measurement period. The percentage of adolescents having one or more adolescent well-care visits was also higher for those in other CRG categories, ranging from 69 percent to 71 percent among CSHCN, and 71 percent among adolescents with significant acute conditions.

Table 6 shows results for well-child visits in the 3rd, 4th, 5th, and 6th years of life and adolescent well-care visits for PCCM. Overall, 85 percent of children 3 to 6 years old had one or more well-child visits, and 73 percent of adolescents had one or more well-care visits during the measurement period. These percentages considerably exceed the national HEDIS[®] means for these measures (72 percent and 48 percent, respectively). Although rates presented for PCCM are inflated due to lifting of provider constraints, performance on these measures is likely comparable to or better than that reported nationally.

Table 6. Well-Child and Adolescent Well-Care Visits in PCCM

	One or More Well-Child Visits in 3 rd , 4 th , 5 th , and 6 th Years of Life		One or More Adolescent Well-Care Visits	
	<u># Compliant</u> <u># Eligible</u>	Percent	<u># Compliant</u> <u># Eligible</u>	Percent
Healthy	<u>49,150</u> 60482	81.3%	<u>37,102</u> 53,970	68.8%
Significant Acute	<u>16,310</u> 18,215	89.5%	<u>7,583</u> 9,539	79.5%
CSHCN – Minor	<u>9,572</u> 10,712	89.4%	<u>8,186</u> 10,673	76.7%
CSHCN – Moderate	<u>11,781</u> 13,375	88.1%	<u>11,703</u> 15,144	77.3%
CSHCN – Major	<u>3,972</u> 4,421	89.8%	<u>4,156</u> 5,215	79.7%
Unassigned	<u>1</u> 1	100.0%	<u>0</u> 0	0.0%
Total	<u>90,786</u> 107,206	84.7%	<u>68,730</u> 94,541	72.7%

Among healthy children ages 3 to 6 years old in PCCM, 81 percent had one or more well-child visits during the measurement period. The percentage of children having one or more well-child visits was higher for those in other CRG categories, ranging from 88 percent to 90 percent among CSHCN, and 90 percent among children with significant acute conditions.

Among adolescents classified as healthy in PCCM, 69 percent had one or more visits for adolescent well-care during the measurement period. The percentage of adolescents having one or more adolescent well-care visits was also higher for those in other CRG categories,

ranging from 77 percent to 80 percent among CSHCN, and 80 percent among adolescents with significant acute conditions.

Table 7 shows results for well-child visits in the 3rd, 4th, 5th, and 6th years of life and adolescent well-care visits for CHIP. Overall, 68 percent of children 3 to 6 years old had one or more well-child visits, and 50 percent of adolescents had one or more well-care visits during the measurement period. The percentage for well-child visits is lower than the national HEDIS[®] mean for this measure (72 percent); however, the percentage for adolescent well-care is slightly higher than the national HEDIS[®] mean for this measure (48 percent). Given that the HEDIS[®] results presented for CHIP are inflated due to the lifting of provider constraints, the real differences between these measures in CHIP and those reported nationally are likely to be greater, suggesting that improvement in access to and utilization of well-child and adolescent well-care visits in CHIP is warranted.

Table 7. Well-Child and Adolescent Well-Care Visits in CHIP

	One or More Well-Child Visits in 3 rd , 4 th , 5 th , and 6 th Years of Life		One or More Adolescent Well-Care Visits	
	<u># Compliant</u> <u># Eligible</u>	Percent	<u># Compliant</u> <u># Eligible</u>	Percent
Healthy	<u>14,657</u> 22,377	65.5%	<u>39,247</u> 85,135	46.1%
Significant Acute	<u>3,118</u> 4,178	74.6%	<u>5,497</u> 9,030	60.9%
CSHCN – Minor	<u>1,096</u> 1,473	74.4%	<u>4,564</u> 8,120	56.2%
CSHCN – Moderate	<u>2,071</u> 2,758	75.1%	<u>6,533</u> 10,710	61.0%
CSHCN – Major	<u>200</u> 263	76.1%	<u>1,447</u> 2,390	60.5%
Unassigned	<u>0</u> 0	0.0%	<u>0</u> 0	0.0%
Total	<u>21,142</u> 31,049	68.1%	<u>57,288</u> 115,385	49.6%

Among healthy children ages 3 to 6 years old in CHIP, 66 percent had one or more well-child visits during the measurement period. The percentage of children having one or more well-child visits was higher for those in other CRG categories, ranging from 74 percent to 76 percent among CSHCN, and 75 percent among children with significant acute conditions.

Among adolescents classified as healthy in CHIP, 46 percent had one or more visits for adolescent well-care during the measurement period. The percentage of adolescents having

one or more adolescent well-care visits was also higher for those in other CRG categories, ranging from 56 percent to 61 percent among CSHCN, and 61 percent among adolescents with significant acute conditions.

AHRQ Pediatric Quality Indicator (PDI) Results

Tables A1, A2, and A3 show PDI admission rates for STAR, PCCM, and CHIP for the following ambulatory care sensitive conditions: asthma, diabetes short-term complications, gastroenteritis, perforated appendix, and urinary tract infection. PDI admission rates are per 100,000 eligible members for all conditions except perforated appendix, for which the rate is per 100 members admitted with a diagnosis of appendicitis. AHRQ age specifications for eligibility depend on the condition for which the rate is calculated:

- For asthma admission rates, members 2 to 17 years old are eligible;
- For diabetes short-term complications admission rates, members 6 to 17 years old are eligible;
- For gastroenteritis and urinary tract infection admission rates, members 3 months to 17 years old are eligible;
- For perforated appendix admission rates, members 1 to 17 years old who were diagnosed with appendicitis are eligible.

Table A1 shows PDI admission rates for children and adolescents in STAR, stratified by CRG.

- *Asthma*: Admission rates in STAR were highest among CSHCN with moderate conditions (1,205 per 100,000) and major conditions (1,699 per 100,000). The rate among CSHCN with major conditions is nearly 14 times greater than the national rate of 123 per 100,000 reported by AHRQ.
- *Diabetes short-term complications*: Admission rates in STAR were highest among CSHCN with major conditions (873 per 100,000), for whom admissions were considerably greater than for CSHCN with moderate conditions (183 per 100,000). Because diabetes is a chronic condition, the low rate among children in the significant acute category (0 per 100,000) is to be expected. The rate among CSHCN with major conditions is more than 31 times greater than the national rate of 28 per 100,000 reported by AHRQ.
- *Gastroenteritis*: Admission rates in STAR were highest among CSHCN with major conditions (533 per 100,000), for whom admissions were considerably greater than for CSHCN with moderate conditions (136 per 100,000) or minor conditions (122 per 100,000). Because gastroenteritis is an acute condition, the high rate among children in the significant acute category (168 per 100,000) is to be expected. The rate among CSHCN with major conditions is more than five times the national rate of 105 per 100,000 reported by AHRQ.

- *Perforated appendix*: Admission rates for perforated appendix were highest among children in the significant acute category (47 per 100) and CSHCN with major conditions (46 per 100). The rate among children in the significant acute category and CSHCN with major conditions is higher than the national rate of 29 per 100 reported by AHRQ.
- *Urinary tract infection*: Admission rates in STAR were highest among CSHCN with major conditions (443 per 100,000), for whom admissions were considerably greater than for CSHCN with minor conditions (122 per 100,000) and CSHCN with moderate conditions (78 per 100,000). The rate among CSHCN with major conditions is more than 10 times greater than the national rate of 43 per 100,000 reported by AHRQ.

Table A2 shows PDI admission rates for children and adolescents in PCCM, stratified by CRG category.

- *Asthma*: Admission rates in PCCM were highest among CSHCN with moderate conditions (1,207 per 100,000) and major conditions (1,468 per 100,000). These rates were notably higher than that observed among CSHCN with minor conditions (0 per 100,000). The rate among CSHCN with major conditions is nearly 12 times greater than the national rate of 123 per 100,000 reported by AHRQ.
- *Diabetes short-term complications*: Admission rates in PCCM were highest among CSHCN with major conditions (529 per 100,000), for whom admissions were considerably greater than for CSHCN with moderate conditions (144 per 100,000). Because diabetes is a chronic condition, the low rate among children in the significant acute category (0 per 100,000) is to be expected. The rate among CSHCN with major conditions is nearly 19 times greater than the national rate of 28 per 100,000 reported by AHRQ.
- *Gastroenteritis*: Admission rates in PCCM were highest among CSHCN with major conditions (904 per 100,000), followed by children with significant acute conditions (505 per 100,000). Because gastroenteritis is an acute condition, the high rate among children in the significant acute category is to be expected. These rates are considerably higher than those observed among CSHCN with minor conditions (371 per 100,000) or moderate conditions (373 per 100,000). The rate among CSHCN with major conditions is more than eight times the national rate of 105 per 100,000 reported by AHRQ.
- *Perforated appendix*: Among children and adolescents in PCCM admitted for appendicitis, rates for perforated appendix admission were highest among CSHCN with major conditions (42 per 100) and children with significant acute conditions (37 per 100). The admission rate among CSHCN with major conditions for perforated appendix was higher than the national rate of 29 per 100.
- *Urinary tract infection*: Admission rates in PCCM were highest among CSHCN with major conditions (428 per 100,000), for whom admissions were considerably greater than for CSHCN with minor conditions (257 per 100,000) and CSHCN with moderate

conditions (150 per 100,000). The rate among CSHCN with major conditions is nearly 10 times greater than the national rate of 43 per 100,000 reported by AHRQ.

Table A3 shows PDI admission rates for children and adolescents in CHIP, stratified by CRG category.

- *Asthma*: Admission rates in CHIP were highest among CSHCN with moderate conditions (977 per 100,000) and major conditions (1,201 per 100,000). Because asthma is a chronic condition, the low rate among children in the significant acute category (0 per 100,000) is to be expected. The rate among CSHCN with major conditions is more than nine times greater than the national rate of 123 per 100,000 reported by AHRQ.
- *Diabetes short-term complications*: Admission rates in CHIP were highest among CSHCN with major conditions (797 per 100,000), for whom admissions were considerably greater than for CSHCN with moderate conditions (174 per 100,000) and minor conditions (0 per 100,000). Because diabetes is a chronic condition, the low rate among children in the significant acute category (0 per 100,000) is to be expected. The rate among CSHCN with major conditions is more than 28 times greater than the national rate of 28 per 100,000 reported by AHRQ.
- *Gastroenteritis*: Admission rates in CHIP were highest among CSHCN with major conditions (536 per 100,000), for whom admissions were greater than for CSHCN with moderate conditions (130 per 100,000) or minor conditions (102 per 100,000). Because gastroenteritis is an acute condition, the high rate among children in the significant acute category (121 per 100,000) is to be expected. The rate among CSHCN with major conditions is more than five times the AHRQ national rate of 105 per 100,000.
- *Perforated appendix*: Admission rates in CHIP were highest among CSHCN with major conditions (54 per 100), for whom admissions were greater than for CSHCN with minor conditions (38 per 100) and CSHCN with moderate conditions (33 per 100). The rate among CSHCN with major conditions is higher than the national rate of 29 per 100.
- *Urinary tract infection*: Admission rates in CHIP were highest among CSHCN with major conditions (190 per 100,000) for whom admissions were considerably higher than for CSHCN with moderate conditions (57 per 100). The rate among CSHCN with major conditions is more than four times greater than the national rate of 43 per 100,000 reported by AHRQ.

Appendix A. Pediatric Quality Indicator Tables

Table A1. STAR AHRQ Pediatric Quality Indicator Admission Rates

PDI Measure		CRG Category						Total
		Healthy	Significant Acute	CSHCN Minor	CSHCN Moderate	CSHCN Major	Unassigned	
Asthma	Eligible members	695,486	101,268	49,797	94,631	14,894	3,737	959,813
	Admissions rate	0.43	2.96	2.01	1204.68	1698.67	0.00	145.86
Diabetes short-term complications	Eligible members	434,473	50,501	35,133	60,090	10,658	2,424	593,279
	Admissions rate	0.00	0.00	0.00	183.06	872.58	41.25	34.39
Gastroenteritis	Eligible members	843,656	147,980	57,283	111,603	18,946	4,164	1,183,632
	Admissions rate	25.60	168.27	122.20	136.20	533.09	72.05	66.83
Perforated appendix	Eligible members	289	317	144	182	63	2	997
	Admissions rate	29.41	46.69	35.42	40.66	46.03	0.00	38.82
Urinary tract infection	Eligible members	843,656	147,980	57,283	111,603	18,946	4,164	1,183,632
	Admissions rate	11.97	132.45	122.20	77.95	443.37	0.00	45.45

Note: Admissions rates are per 100,000 members, except for perforated appendix admissions rate, which is per 100 admissions with a diagnosis of appendicitis.

Table A2. PCCM AHRQ Pediatric Quality Indicator Admission Rates

PDI Measure		CRG Category						Total
		Healthy	Significant Acute	CSHCN Minor	CSHCN Moderate	CSHCN Major	Unassigned	
Asthma	Eligible members	346,214	68,824	51,592	65,937	18,254	1,852	552,673
	Admissions rate	0.87	0.00	0.00	1,207.21	1,468.17	54.00	193.24
Diabetes short-term complications	Eligible members	224,087	37,203	36,808	45,801	12,852	1,214	357,965
	Admissions rate	0.00	0.00	0.00	144.10	529.10	82.37	37.71
Gastroenteritis	Eligible members	418,216	98,561	56,339	76,890	21,241	2,006	673,253
	Admissions rate	93.73	505.27	370.97	373.26	903.91	0.00	234.38
Perforated appendix	Eligible members	191	249	141	148	84	0	813
	Admissions rate	27.23	37.35	36.88	31.08	41.67	0.00	34.19
Urinary tract infection	Eligible members	418,216	98,561	56,339	76,890	21,241	2,006	673,253
	Admissions rate	27.02	307.42	257.37	149.56	428.42	99.70	114.22

Note: Admissions rates are per 100,000 members, except for perforated appendix admissions rate, which is per 100 admissions with a diagnosis of appendicitis.

Table A3. CHIP AHRQ Pediatric Quality Indicator Admission Rates

PDI Measure		CRG Category						Total
		Healthy	Significant Acute	CSHCN Minor	CSHCN Moderate	CSHCN Major	Unassigned	
Asthma	Eligible members	366,452	36,093	24,412	36,557	5,747	110	469,371
	Admissions rate	0.00	0.00	0.00	976.56	1200.63	0.00	90.76
Diabetes short-term complications	Eligible members	310,473	27,954	21,945	31,534	5,271	94	397,271
	Admissions rate	0.00	0.00	0.00	174.41	796.81	0.00	24.42
Gastroenteritis	Eligible members	371,059	37,121	24,545	36,895	5,789	110	475,519
	Admissions rate	15.36	121.23	101.85	130.10	535.50	0.00	43.32
Perforated appendix	Eligible members	185	144	79	87	48	0	543
	Admissions rate	20.00	34.03	37.97	33.33	54.17	0.00	31.49
Urinary tract infection	Eligible members	371,059	37,121	24,545	36,895	5,789	110	475,519
	Admissions rate	7.28	129.31	114.08	56.92	190.02	0.00	28.39

Note: Admissions rates are per 100,000 members, except for perforated appendix admissions rate, which is per 100 admissions with a diagnosis of appendicitis.

Endnotes

¹ Klitzner, T. S., L. A. Rabbitt, and R. K. R. Chang. 2010. "Benefits of care coordination for children with complex disease: A pilot medical home project in a resident teaching clinic." *The Journal of Pediatrics* 156(6): 1006-1010.

² Kuhlthau, K.A., S. Bloom, J. Van Cleave, A.A. Knapp, D. Romm, K. Klatka, C.J. Homer, P.W. Newacheck, J.M. Perrin. 2011. "Evidence for family-centered care for children with special health care needs: a systematic review." *Academic Pediatrics* 11(2): 136-143.

³ NS-CSHCN (National Survey of Children with Special Health Care Needs). 2005/2006. Available at <http://cshcndata.org>.

⁴ McPherson, M., P. Arango, H. Fox, C. Lauver, M. McManus, P.Q. Newacheck, J.M. Perrin, J.P. Shonkoff, and B. Strickland. 1998. "A New Definition of Children With Special Health Care Needs." *Pediatrics* 102(1): 137-140.

⁵ van Dyck, P.C., M.D. Kogan, M.G. McPherson, G.R. Weissman, and P.W. Newacheck. 2004. "Prevalence and Characteristics of Children With Special Health Care Needs." *Archives of Pediatrics and Adolescent Medicine* 158: 884-890.

⁶ Mayer, M.L., Skinner, A.C., & Slifkin, R.T. 2004. "Unmet Need for Routine and Specialty Care: Data From the National Survey of Children With Special Health Care Needs." *Pediatrics* 113: e109-e115.

⁷ Weller, W.E., Minkovitz, C.S., & Anderson, G.F. 2003. "Utilization of Medical and Health-Related Services Among School-Age Children and Adolescents With Special Health Care Needs (1994 National Health Interview Survey on Disability [NHIS-D] Baseline Data)". *Pediatrics* 112: 593-603.

⁸ NSCH (National Survey of Children's Health). 2007. Available at <http://cshcndata.org>.

⁹ Neff, J., V. Sharp, J. Muldoon, J. Graham, J. Popalisky, and J.C. Gay. 2002. "Identifying and Classifying Children with Chronic Conditions Using Administrative Data with the Clinical Risk Group Classification System." *Ambulatory Pediatrics* 2(1): 71-79.

¹⁰ Another accepted approach to identify CSHCN is through the use of parent interviews, either face-to-face, via telephone, or in writing. In telephone surveys that the EQRO conducts, the CSHCN Screener[®] is used to classify children as having or not having special health care needs (<http://childhealthdata.org/>). This report does not include survey results on CSHCN. Readers interested in CSHCN survey results should consult the EQRO's fiscal year 2010 CSHCN Report, which includes analyses of the most recent child survey data for STAR (fiscal year 2009), PCCM (fiscal year 2009), and CHIP (fiscal year 2010).

¹¹ The information that NCQA compiles for Medicaid Managed Care programs can be viewed at www.ncqa.org. Submission of data to the NCQA is a voluntary process; therefore, health plans that submit HEDIS[®] data are not fully representative of the industry. Health plans participating in NCQA HEDIS[®] reporting tend to be older, are more likely to be federally qualified, and are more likely to be affiliated with a national managed care company than the overall population of health plans in the United States. (See Beaulieu and Epstein, 2002.)

¹² Beaulieu, N.D., and A.M. Epstein. 2002. "National Committee on Quality Assurance Health-Plan Accreditation: Predictors, Correlates of Performance, and Market Impact." *Medical Care* 40(4): 325-337.

¹³ For this reason, the name "HEDIS[®]" has been removed from the titles of these measures in this report.

¹⁴ The EQRO used PDI Version 4.2 specifications to calculate rates of ACSC-related inpatient admissions. Rates are based on the number of hospital discharges divided by the number of people in the area (except for perforated appendix).

¹⁵ AHRQ (Agency for Healthcare Quality and Research). 2004. *AHRQ Quality Indicators – Guide to Prevention Quality Indicators: Hospital Admission for Ambulatory Care Sensitive Conditions*. Rockville, MD: AHRQ. Revision 4. (November 24, 2004). AHRQ Pub. No. 02-R0203.

¹⁶ AHRQ. 2011. *AHRQ Quality Indicators – Pediatric Quality Indicator Comparative Data: Based on the 2008 Nationwide Inpatient Sample (NIS), Version 4.3*. Rockville, MD: AHRQ.

¹⁷ Few children in CHIP were included in the 12 to 24 month old age group because children in this age group in CHIP are covered under CHIP Perinate. Interpretation of quality of care results should take the small sample size into consideration.