



# Children's Health Insurance Programs in New Hampshire

*Access, Prevention, Care Management, Utilization, and Payments,  
State Fiscal Year 2007*

A report prepared for the  
New Hampshire Department of Health and Human Services  
by the  
Maine Health Information Center

December 2008

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## About the New Hampshire Comprehensive Health Care Information System

The New Hampshire Comprehensive Health Care Information System (NH CHIS) is a joint project between the New Hampshire Department of Health and Human Services (NH DHHS) and the New Hampshire Insurance Department (NHID). The NH CHIS was created by state statute (RSA 420-G:11-a) to make health care data “available as a resource for insurers, employers, providers, purchasers of health care, and state agencies to continuously review health care utilization, expenditures, and performance in New Hampshire and to enhance the ability of New Hampshire consumers and employers to make informed and cost-effective health care choices.” For more information about the NH CHIS, please visit <http://www.nh.gov/nhchis>, [www.nhchis.org](http://www.nhchis.org), or contact Andrew Chalsma, NH DHHS, [achalsma@dhhs.state.nh.us](mailto:achalsma@dhhs.state.nh.us).

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## About the Study

This study was conducted by the Maine Health Information Center (MHIC) under a contract with the State of New Hampshire Department of Health and Human Services, Office of Medicaid Business and Policy, titled New Hampshire Comprehensive Health Care Information System. The views expressed are those of the authors and do not necessarily represent the views of the MHIC or the New Hampshire DHHS. For more information on the study, contact Karl Finison, Director of Research, Maine Health Information Center, 207-430-0632, [kfinison@mhic.org](mailto:kfinison@mhic.org).

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## EXECUTIVE SUMMARY

This study evaluated a variety of health care measures to compare children enrolled in New Hampshire Medicaid, NH SCHIP (State Children's Health Insurance Program), and children enrolled in commercial health insurance plans in New Hampshire for SFY2007. The study updates the SFY2006 report on New Hampshire children's health insurance incorporating New Hampshire Medicaid data and the Comprehensive Health Care Information System (NH CHIS) commercial health care claims database. The Maine Health Information Center used New Hampshire Medicaid and NH CHIS commercial administrative eligibility and claims data from services incurred in State Fiscal Year 2007\* to study the following for New Hampshire children aged 0–18:

- plan enrollment and disenrollment;
- access to primary care practitioners;
- well-child visits;
- effectiveness of care management;
- prevalence and utilization for mental health disorders; and
- utilization and payments.

NCQA (National Committee for Quality Assurance) HEDIS (Healthcare Effectiveness Data and Information Set)\*\* quality and access to care measures were reported based on the administrative claims data submitted to the NH CHIS.

### Key Findings:

#### *Enrollment and Disenrollment*

- For enrolled children at the start of the study period (July 2006), 52% of children in SCHIP disenrolled during the year compared to 29% of children enrolled in Medicaid. Twenty-two percent of the children who disenrolled from Medicaid re-enrolled later in the year compared to 10% in SCHIP. Transitions between plan types will be examined in a future study.

#### *Access to Primary Care Practitioner*

- The primary care practitioner access rate for children age 25 months to 6 years was higher for children in SCHIP (94.9%) compared to NH CHIS commercial (88.7%) or Medicaid (88.9%).

#### *Well-Child Visit Rates*

- The well-child visit rate for children age 3–6 years was higher for children in SCHIP (79.8%) and NH CHIS commercial (76.9%) compared to Medicaid (68.9%).

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\* This study was based on reports developed from the NH CHIS database as of May, 2007. Due to database changes and special processing for this project, statistics reported here may not match statistics from other NH CHIS standard reports created before or after May 2007. Some measures use state fiscal year 2006 data in addition to the 2007.

\*\* HEDIS is a tool used by most health plans to measure performance with regards to effectiveness, access, use, satisfaction, and cost of care. NCQA is the independent non-profit organization that maintains the tool.

- For each plan type, well-child visit rates declined with age; for example, within Medicaid 87.4% of children age 16–35 months had a well-child visit compared to 48.5% of adolescent children age 12–18 years.

#### *Effectiveness of Care Management*

- The prevalence rate of asthma in Medicaid (9.1%) was double the NH CHIS commercial rate (4.4%) and higher than the SCHIP rate (7.7%); 94.4% of continuously enrolled children on Medicaid identified as having “persistent” asthma used appropriate controller medications, which was not statistically different than the SCHIP rate of 91.3%, and was slightly lower than the NH CHIS commercial rate of 97.1%.

#### *Prevalence and Utilization for Mental Health Disorders*

- The mental health disorder prevalence rate for children enrolled in Medicaid (21.5%) was higher than the prevalence rate for SCHIP (19.5%) and NH CHIS commercial (12.2%).
- The most common mental health disorder was attention-deficit hyperactivity disorder (ADHD) with similar prevalence in Medicaid (8.4%) and SCHIP (8.2%). The prevalence in NH CHIS commercial was lower (4.8%).
- For children identified with a mental health disorder, the visit rate with mental health specialists was significantly higher in Medicaid (11,946 per 1,000 members), compared to SCHIP (4,540 per 1,000 members), or NH CHIS commercial (4,292 per 1,000 members).
- Among children with a mental health disorder, the prevalence of children using a psychotropic medication was the same in Medicaid (56%) and CHIS commercial (56%); the rate for children in SCHIP was higher (73%).

#### *Utilization and Payments*

- Excluding newborns and infants (age 0–11 months), the inpatient hospitalization rate for Medicaid (30.2 per 1,000 members) was higher than the SCHIP rate (20.7 per 1,000 members) or the NH CHIS commercial rate (12.8 per 1,000 members).
- For five selected Ambulatory Care Sensitive conditions (asthma, dehydration, bacterial pneumonia, urinary tract infections, and gastroenteritis) the inpatient hospitalization rate for children enrolled in Medicaid (4.4 per 1,000 members) was higher than the SCHIP rate (2.8 per 1,000 members) and more than double the rate for NH CHIS commercial (1.7 per 1,000 members).
- The rate for outpatient emergency department visits for children enrolled in Medicaid (590 per 1,000 members) was almost three times the rate for children enrolled in NH CHIS commercial (205 per 1,000 members); children enrolled in SCHIP also had a higher rate (348 per 1,000 members) compared to CHIS commercial.
- The rate for office/clinic visits was higher for children enrolled in Medicaid (3,797 per 1,000 members) compared to SCHIP (3,380 per 1,000 members) and NH CHIS commercial (2,864 per 1,000 members).
- For conditions for which an alternative setting of care could have been more appropriate (e.g., upper respiratory infection, ear infection, bronchitis), the outpatient emergency department use rate for children enrolled in NH Medicaid (243 per 1,000

members) was double that of SCHIP (122 per 1,000 members) and four times that of NH CHIS commercial (61 per 1,000 members).

- Excluding special services specific to Medicaid and newborns and infants (age 0–11 months), the comparative payment rates for children per member per month (PMPM) were slightly higher in Medicaid (\$138 PMPM) compared with SCHIP (\$128 PMPM) or NH CHIS commercial (\$113 PMPM).

**Limitations:** NH CHIS commercial population contains information only on New Hampshire residents whose claims are included in the NH Comprehensive Health Care Information System database, that generally only includes members whose policies were purchased in New Hampshire. Areas close to the borders of New Hampshire may be less well represented in this study than interior areas of the state.

This study is based primarily on administrative claims data. Administrative claims data is collected primarily for the purpose of making financial payments. Specific provider, diagnosis, and procedure coding are typically required as part of the financial payment processes. The use of claims data is an efficient and less costly method to report on health care utilization and payments than other methods such as surveys or patient chart audits. Administrative claims data may under-report some diagnostic conditions or services; however, some studies indicate that administrative claims data may provide a more accurate rate than medical chart review.<sup>1,2,3,4,5,6</sup>

Differences in utilization and payment measures between Medicaid, SCHIP, and NH CHIS commercial may be influenced by differences in the health status of the children covered or differences in the insurance plan delivery model and benefit structure. Medicaid is a fee-for-service program that: covers services without co-payments; covers a wide variety of services that have limited or no benefit coverage in commercial plans; and is subject to the federal requirements of the Early Periodic Screening, Diagnosis, and Treatment (EPSDT) Program (Title XIX of the Social Security Act). The possibility also exists that the differences in the sources of data and methods of payment may account for some of the variation.

**Conclusion and Next Steps:** Prevalence of chronic disease and inpatient and emergency department utilization was higher in children enrolled in NH Medicaid, and to a lesser extent in the SCHIP program, compared to children enrolled in NH CHIS commercial plans. Children in SCHIP had equivalent or higher rates of primary care practitioner access or well-child visits compared to children in NH CHIS commercial. Children in NH Medicaid had equivalent or lower rates of access, although these were generally higher rates than national Medicaid averages. However, rates of inpatient use for ambulatory care sensitive conditions are much higher in NH Medicaid than SCHIP, and SCHIP was higher than NH CHIS commercial. Additionally rates of receiving treatment in the hospital emergency department for conditions that could have been treated in a physician's office or clinic for NH Medicaid, and to a lesser extent SCHIP, were higher than NH CHIS commercial.

This report provided an update of the SFY2006 report on NH CHIS measures for children for SFY2007. Additional value could be gained from an in-depth study of the following:

- variations in measures by geography (study currently underway);
- children in foster care (study currently underway);
- detailed evaluation of teens (study currently draft);

- enrollment, disenrollment and transitions between plan types (study currently in planning phase);
- a study of children without well-child visits (study currently in planning phase);
- a study comparing the primary care use of children with high rates of ED use or inpatient stays for ambulatory care sensitive conditions (study currently in planning phase); and
- a detailed study of coexisting mental health disorders and psychotropic drug use and the drivers for high visit rates in the Medicaid population.

# INTRODUCTION

*Life affords no greater responsibility, no greater privilege, than the raising of the next generation. - C. Everett Koop*

This report was developed to provide a detailed evaluation of access to primary care and well-child preventive visits, effectiveness of care management, mental health disorders, utilization, and payments, for the approximately 93% of children in New Hampshire with public or private insurance.

Children who have health insurance are more likely to have a usual source of health care, access preventive and other needed health services, and have improved social and emotional development.<sup>7</sup> Among children nationally without insurance, 35% did not have a personal doctor or nurse and 26% did not access care. Nationally, the percentage of children covered by private health insurance has declined while the percentage of children covered by public insurance has increased. NH was one of seven states that experienced an increase in private insurance during the period of 1997/1998–2003/2004.<sup>8</sup> During 2006–2007, children in New Hampshire were more likely to have private health insurance (76%) compared to the national average (60%). Compared to Maine or Vermont, New Hampshire children were more likely to have private insurance and less likely to have public insurance.<sup>9</sup>

## Health Insurance Coverage for Children by State and Coverage Type, Current Population Survey, 2006–2007<sup>10</sup>

	Employer	Individual	Medicaid	Other Public	Total Insured	Uninsured
New Hampshire	72%	4%	17%	NSD	93%	7%
Maine	57%	4%	31%	NSD	94%	6%
Vermont	52%	NSD	36%	NSD	92%	8%
Massachusetts	67%	3%	24%	NSD	95%	5%
United States	55%	4%	28%	1%	89%	11%

NSD: Not sufficient data

Note: There is known underreporting in Current Population Survey of Medicaid coverage and the percent of NH children enrolled in Medicaid at any time during the year is known to be higher than shown above. The data remains unadjusted to allow for comparison of New Hampshire to the other states and the nation.

The two-year average of the 2006 and 2007 U.S. Census Current Population Survey data showed that NH had the nation's twelfth highest health insurance rate for children, within the top group of states with the highest insurance rates. During 2006-2007, 7% of NH children were without health insurance, unchanged from the prior year.<sup>11</sup> One analysis found that in states with small declines or modest gains in employer-sponsored insurance (ESI), there was a significant decline in uninsured children.<sup>12</sup> Another national analysis showed that over the past decade, both Medicaid and the State Children's Health Insurance Program (SCHIP) have helped offset the erosion of ESI and have significantly decreased the numbers of low-income children who are uninsured.<sup>13</sup>

Efforts to increase the percentage of New Hampshire children with health insurance began in 1993 with the creation of the New Hampshire Healthy Kids Corporation (NHHK). Then in 1994, the New Hampshire Legislature expanded eligibility for the Medicaid program (Ti-

tle XIX of the Social Security Act) to children through the age of 18 and whose family incomes were up to 185% of the Federal Poverty Level (FPL). The federal government created the SCHIP, by the Balanced Budget Act of 1997, (Title XXI of the Social Security Act), and allocated about \$20 billion over five years to help states insure children whose family incomes made them ineligible for Medicaid. The NH DHHS implemented the SCHIP program in New Hampshire by drawing upon the experience and existing infrastructure of NHHK to administer the program. NHHK also took an increasingly important role in outreach and enrollment for both SCHIP and Medicaid.

Nationally, many new SCHIP enrollees report unmet needs, disparities in access, and sub-optimal care prior to enrollment in SCHIP.<sup>14</sup> Studies have shown that SCHIP improved access to and quality of care for chronic medical conditions and increased access to dental services.<sup>15,16,17</sup>

In NH, children make up a major component of the Medicaid program; during SFY2007, children represented over 60% of NH Medicaid enrollees.

National NCQA (National Committee for Quality Assurance) HEDIS (Healthcare Effectiveness Data and Information Set)\* measures indicate that children enrolled in Medicaid managed care programs have lower rates of access to primary care practitioners, lower rates of well-child preventive visits, lower immunization rates, and poorer effectiveness of care measures compared with children enrolled in commercial managed care health plans.<sup>18</sup> Prior studies (including one of emergency department use in New Hampshire) indicate that children enrolled in Medicaid have higher service utilization rates compared with children enrolled in commercial insurance.<sup>19,20,21</sup> At least one study has indicated that for some states access to care for Medicaid enrollees is similar to commercial, while in other states it is higher.<sup>22</sup>

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## Overview and Purpose of Report

In January 2008, the New Hampshire Department of Health and Human Services released a study developed by the Maine Health Information Center, University of Southern Maine Muskie School of Public Service, and New Hampshire Department of Health and Human Services based on an earlier Thomson Healthcare Thomson Healthcare report with significant enhancements. Additional measures of quality of care, prevention, utilization, and payments were added for the report as well as comparative information on New Hampshire children covered by NH CHIS commercial health insurance plans (that began collecting commercial claims data beginning with January 2005 paid claims). HEDIS measures were reported based on the administrative claims data submitted. The current report also developed by the Maine Health Information Center, University of Southern Maine Muskie School of Public Service, and New Hampshire Department of Health and Human Services updates and further expands the January 2008 report.

The purpose of this study was to describe and compare health care access, preventive services, care management, utilization, and medical payments for children in New Hampshire. Rates for children enrolled in NH Medicaid (Healthy Kids Gold), SCHIP (Healthy Kids Silver), and NH CHIS commercial insurance plans were compared.

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\* HEDIS is a tool used by most health plans to measure performance with regards to effectiveness, access, use, satisfaction, and cost of care. NCQA is the independent non-profit organization that maintains the tool.

The scope of the study was to:

- compare Medicaid, SCHIP, and NH CHIS commercially insured children residing in New Hampshire;
- contrast rates by age of child;
- describe enrollment and compare rates of disenrollment for children;
- compare rates of access to primary care practitioners for children;
- compare rates of well-child visits for children;
- compare HEDIS effectiveness of care management measures for selected diseases (asthma, upper respiratory infection, and pharyngitis) for children;
- describe and compare prevalence and utilization rates of mental health disorders for children;
- describe psychotropic medication use for children with mental health disorders;
- compare rates of inpatient, emergency department, and office-clinic visit use for children;
- compare rates of per member per month payments.

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## Data Sources and Methods

This study was based on administrative eligibility and claims data from New Hampshire Medicaid and the NH CHIS commercial database for the SFY2007 (state fiscal year July, 2006–June 2007). For some statistical measures, a two-year window was required (July 2005–June 2007). SFY2006-SFY2007 trends were evaluated and are discussed in the text. The methods used in this study are described in Appendix 1 at the end of the report.

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## Population Studied in the Report

The SFY2007 experience of three New Hampshire populations was studied: children covered by NH Medicaid (Healthy Kids Gold), children covered by NH's SCHIP program (Healthy Kids Silver), and children covered by commercial insurance plans that reported data to the NH CHIS. Consistent with other reporting for New Hampshire Medicaid for this project, the definition of a child for this report is a covered member under the age of 19. SCHIP does not cover infants under the age of one (infants who would be in SCHIP based on family federal poverty level of 185% to 300% are covered under Medicaid). Children with severe disabilities (e.g., Katie Becket program, aid to needy blind) were excluded from the Medicaid data. Children residing outside of New Hampshire were excluded from NH CHIS commercial data. NH CHIS commercial data is also limited by not including data from insurance policies written outside of New Hampshire and from self-funded plans that do not use a third part administrator for claims processing.

In New Hampshire, the Medicaid population is enrolled in a fee-for-service plan without assigned primary care physicians (PCPs) authorizing referrals to further care. Children in SCHIP are enrolled in a Health Maintenance Organization (HMO) product, currently man-

aged by Anthem, that includes traditional HMO elements like PCPs. The population represented in the CHIS commercial data is a mixture of Preferred Provider Organizations (21%), HMO (56%), Point-of-Service (12%), and Indemnity (11%).

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## **Interpretation of Results and Limitations**

This is a study of children covered by three different types of health plans (Medicaid, SCHIP, and NH CHIS commercial) conducted in New Hampshire. The large number of covered members studied lends credibility to the findings. However, a number of cautions about the data used and results of this study are provided.

This study was based on administrative eligibility and claims data. Differences in provider or insurer claims coding, data processing, or reimbursement arrangements may contribute to the variances shown in this report. Differences in benefit packages and coding by NH CHIS commercial insurer products (Preferred Provider Organizations (PPO), HMO, Point-of-Service, Indemnity or Third Party Administrator (TPA)) may also contribute to variances shown in this report. Because of potential for negative bias (reduced rates) in the NH CHIS commercial insurance estimates, children enrolled in Indemnity and TPA plans (11% of children in the NH CHIS commercial data) were excluded from the claims-based HEDIS measures reported. Children enrolled in NH CHIS commercial Indemnity and TPA plans were included in all non-HEDIS sections of the report.

The New Hampshire CHIS commercial population contains information on those residents whose claims are included in the NH CHIS database, that generally only includes members whose policies were purchased in New Hampshire. Areas close to the borders of New Hampshire may be less well represented than areas in the interior. Additionally, companies that self-fund their health care and do not use a TPA to pay claims are not captured in the data set. Because of these two factors, this report underestimates the number of children covered by NH CHIS commercial insurance in New Hampshire.\*

While it may be of interest to evaluate children who migrate between the Medicaid, SCHIP, and NH CHIS commercial insurance plan types, there were limitations in the ability to track children who changed insurance plans or insurance plan types during the year. New Hampshire CHIS commercial could not be linked reliably to SCHIP or Medicaid. Therefore, the migration of children between plan types was not evaluated in this study. A future study is being planned that will assess this issue further, especially with regard to disenrollment and reenrollment in Medicaid.

This study compared insured populations that were very different from each other. While age-specific rates were reported for each plan type, differences in disease status were not adjusted for in the analysis of utilization rates or payments. Future reports in this series will incorporate the use of risk adjustment to account for the differences in health of the populations studied.

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\* The statute requiring submission of data is limited to areas regulated by the NH Department of Insurance.

# RESULTS

## Enrollment and Disenrollment

The intent of this section of the report is to provide information about the enrollment and disenrollment of children tracked through the Medicaid and NH CHIS databases during SFY2007. Disenrollment from health plan enrollment is common for adults and children. Since information about NH children without insurance and NH children covered by policies written out-of-state is not included in the database, this section of the report cannot be used to measure the number of New Hampshire children with health insurance or the number of uninsured children.

Enrollment figures for SFY2007 from the NH CHIS data are provided in Table 1. For children age 0–18 years in SFY 2007, 84,648 children were enrolled in Medicaid, 11,869 children were enrolled in SCHIP, and 165,635 children were represented in NH CHIS commercial insurance data.

**Table 1. Child Enrollment by Plan Type, SFY2007**

	Medicaid	SCHIP	NH CHIS Commercial
Unique Members Covered	84,648	11,869	165,635
Member Months	798,784	87,059	1,553,802
Average Members per Month	66,565	7,255	129,484

Member Month: total full or partial months members were enrolled, whether or not the member actually received services during the period. A member enrolled for an entire year would account for 12 member months.

Average Members per Month: member months divided by 12 and represents a month in time average number of members enrolled for the year.

Enrollment distribution by age is reported in Table 2. The Medicaid plan had a higher percentage of infants and young children covered compared to the SCHIP and NH CHIS commercial plan populations. Forty-percent of children enrolled in Medicaid were age six or younger compared to 30% for SCHIP and 27% for NH CHIS commercial. Therefore, the demographic profile of children in SCHIP is closer to the NH CHIS commercial population than to the Medicaid population. SCHIP does not cover children less than one year of age.

**Table 2. Percent of Total Members by Age Group for Each Plan Type, SFY2007**

Age Group	Medicaid	SCHIP	NH CHIS Commercial
Total All Ages	100% (66,565)	100% (7,255)	100% (129,484)
<1 (0–11 mos)	5% (3,602)	NA	2% (2,760)
1–2 (12–35 mos)	13% (8,347)	9% (650)	8% (10,100)
3–6 (36 mos–6 yrs)	23% (15,009)	21% (1,554)	17% (22,553)
7–11	26% (17,212)	28% (2,033)	25% (32,760)
12–18	34% (22,396)	42% (3,019)	47% (61,310)

NA: SCHIP does not cover children under the age of one (in NH, infants in the federal poverty level group for SCHIP are covered under Medicaid).

Compared to SFY2006, the average number of children covered during SFY2007 increased by 1% in both Medicaid and SCHIP and declined by 4% in the CHIS commercial study data.

Figures 1 and 2 and Tables 3 and 4 provide population estimates for New Hampshire and the NH CHIS average enrollment membership by plan type for the Health Analysis Area (HAA) of the child's residence. In total, the average membership of children included in this study represented 64% of all New Hampshire children. As a percentage of the total New Hampshire population of children included in the data in this study, southern areas (Derry, Exeter, Nashua, Dover, Keene) were less well represented while interior and northern areas (Berlin, North Conway, Lancaster, Woodsville, Littleton, Lebanon, Laconia) had higher rates of representation. The lower rate in southern areas is explained, in part, by children covered by commercial policies that were not written in New Hampshire and, therefore, not in the NH CHIS database. Except for Colebrook, all HAAs had at least 1,000 children included in the study data.

**Table 3. Child Census Estimate, Average Members by Plan Type and Health Analysis Area, SFY2007**

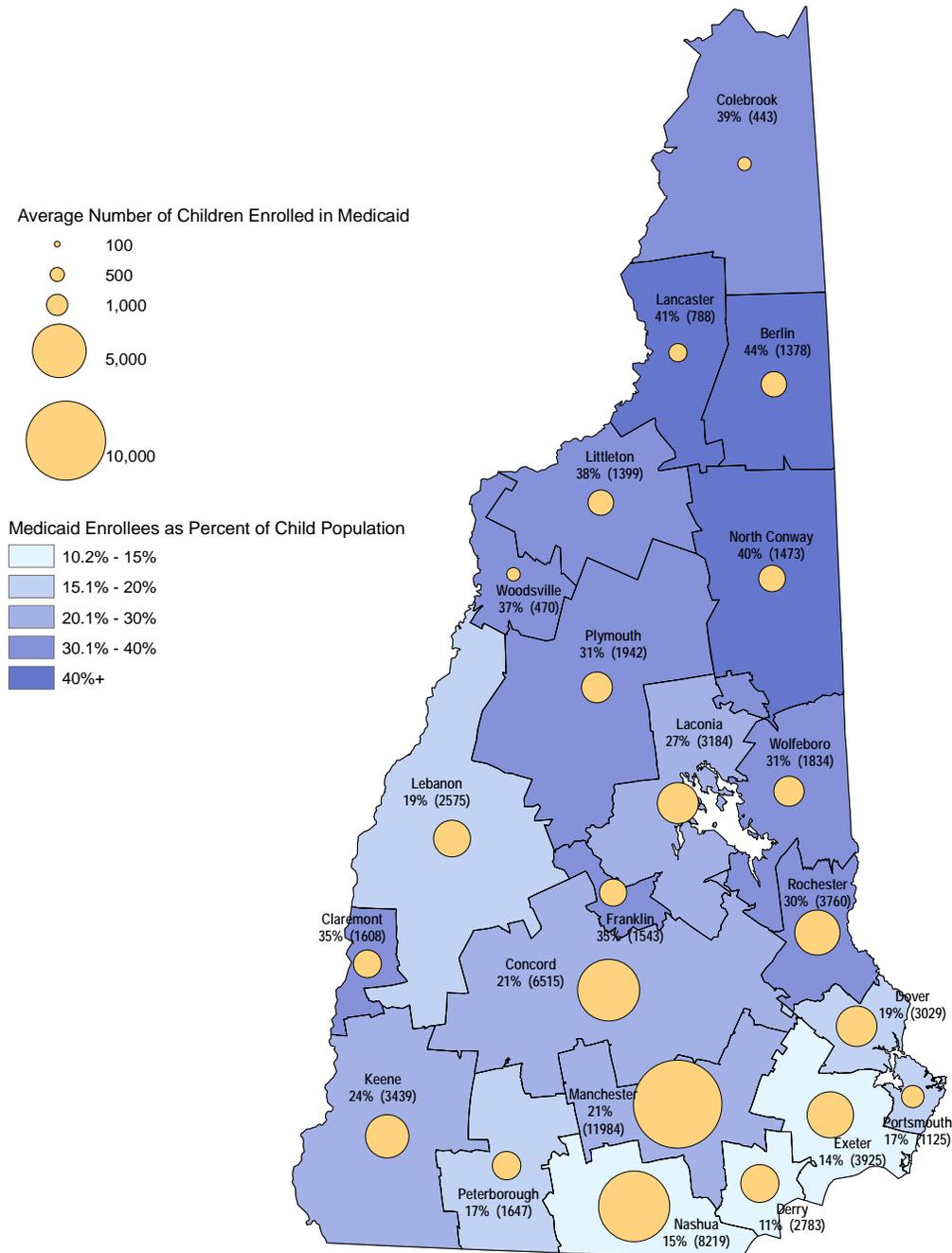
Health Analysis Area	2007 Population Estimate All Ages	2007 Population Estimate Age 0–18	Medicaid Average Members	SCHIP Average Members	NH CHIS Commercial Average Members
State Total	1,324,727	319,510	66,565	7,255	129,484
Berlin	15,680	3,136	1,378	150	1,201
Claremont	19,698	4,548	1,608	102	1,647
Colebrook	5,920	1,137	443	24	331
Concord	133,199	31,653	6,515	785	17,225
Derry	99,032	25,909	2,783	351	7,246
Dover	70,425	16,245	3,029	280	6,345
Exeter	116,611	28,273	3,925	569	9,584
Franklin	18,696	4,426	1,543	137	1,818
Keene	65,536	14,316	3,439	285	5,356
Laconia	55,094	11,595	3,184	404	5,731
Lancaster	8,422	1,909	788	116	696
Lebanon	63,111	13,851	2,575	318	8,191
Littleton	16,862	3,720	1,399	201	1,398
Manchester	221,385	57,033	11,984	1,035	23,207
Nashua	211,855	55,909	8,219	824	20,274
North Conway	17,856	3,655	1,473	229	1,485
Peterborough	36,403	9,518	1,647	254	4,291
Plymouth	28,538	6,190	1,942	300	2,611
Portsmouth	35,742	6,742	1,125	127	3,293
Rochester	50,041	12,524	3,760	380	4,587
Wolfeboro	28,239	5,945	1,834	319	2,457
Woodsville	6,382	1,276	470	68	510

Note: Average members = member months / 12. Population estimates are from Claritas. NH CHIS Commercial represents membership contained in the CHIS database, and is not a complete count of the commercially insured. No data is available on counts of uninsured.

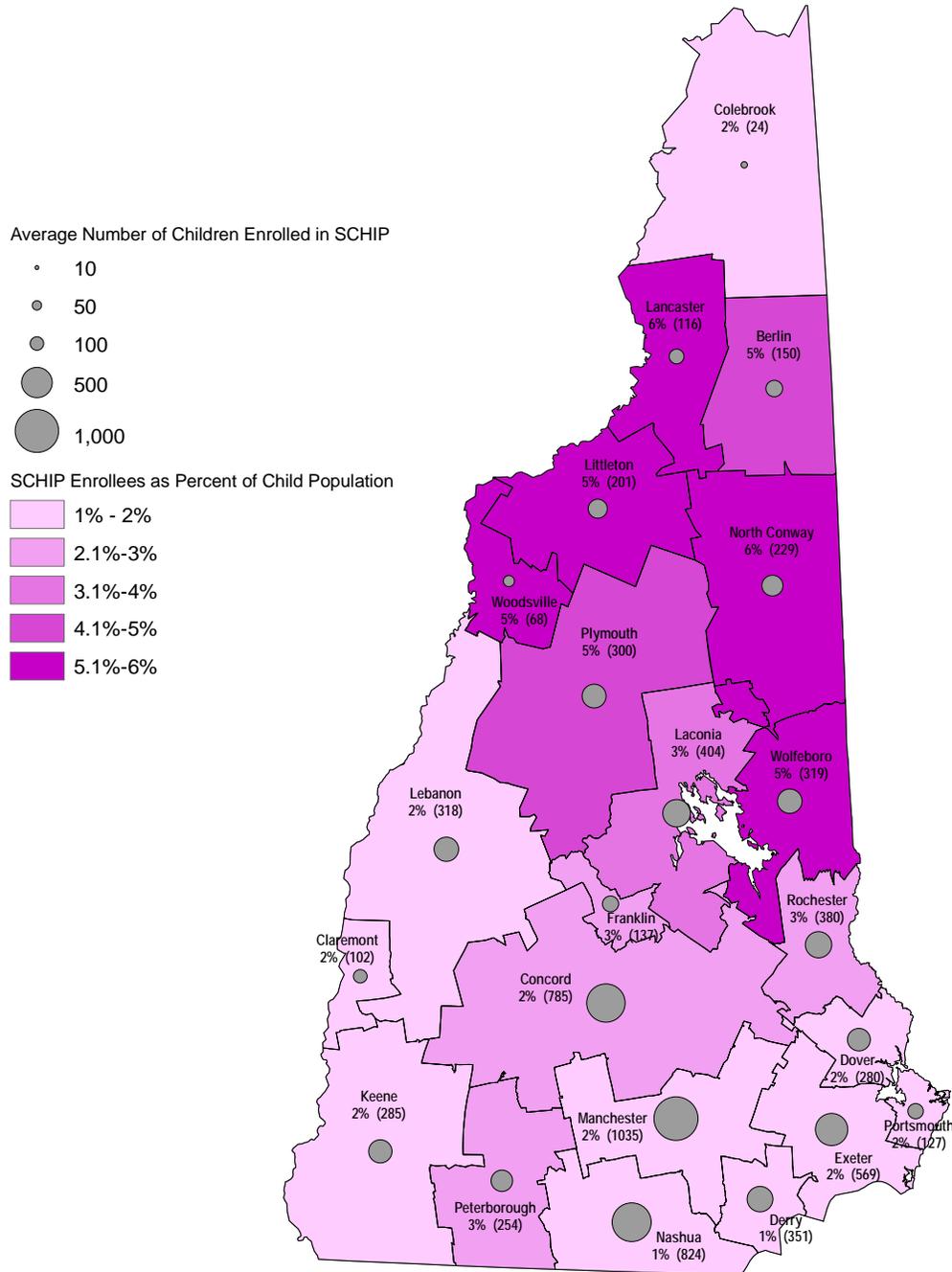
There was significant variability in population estimates and plan enrollment by HAA. The largest number of children in New Hampshire resided in the Manchester (57,033), Nashua (55,909), and Concord (31,653) areas. The areas with a higher percentage of children of total population were Derry, Nashua, Peterborough, and Manchester (all 26%). The areas with lower percentage of total population that were children were Portsmouth and Cole-

brook (19%), Berlin, Woodsville, and North Conway (20%). With some exceptions, northern and interior areas of New Hampshire had a lower percentage of total population that were children, while the southern border areas had a higher percentage of total population that were children. Similar results were found for SFY2006.

**Figure 1. NH Medicaid Enrollees Age 0–18 as a Percent of Total Child Population by Health Analysis Area, Average for SFY2007<sup>23</sup>**



**Figure 2. NH SCHIP Enrollees Age 1–18 as a Percent of Total Child Population by Health Analysis Area, Average for SFY2007<sup>24</sup>**



Southern Health Analysis Areas (HAA) of New Hampshire had relatively higher household income levels and lower percentage of children enrolled in Medicaid or SCHIP compared to northern and interior areas. The Derry HAA had the lowest percentage of households with income below \$30,000 (16%), the lowest percentage of children covered by Medicaid (11%), and the lowest percentage of children covered by SCHIP (1%). Nashua, Exeter, Peterborough, Portsmouth, Manchester, Concord, and Dover also ranked lower than other HAAs on these measures. By contrast, the Berlin HAA had the highest percentage of households with income below \$30,000 (41%), the highest percentage of children covered by Medicaid (44%) and one of the higher percentages covered by SCHIP (5%). Colebrook, Lancaster, Littleton, Claremont, and North Conway also had a higher percentage of households with income below \$30,000 and a higher percentage of children enrolled in Medicaid. Colebrook had a high percentage enrolled in Medicaid (39%) but a lower percentage enrolled in SCHIP (2%).

**Table 4. Selected Child Demographic Statistics by Plan Type and Health Analysis Area, SFY2007**

Health Analysis Area	% of the Total Population in Area that are Children Age 0–18	% of the Total Child Population in Area Reported in This Study	% of Households in the Area with Income <\$30,000	% Children in Area Covered by Medicaid	% Children in Area Covered by SCHIP
State Total	24%	64%	22%	21%	2%
Berlin	20%	87%	41%	44%	5%
Claremont	23%	74%	33%	35%	2%
Colebrook	19%	70%	37%	39%	2%
Concord	24%	77%	22%	21%	2%
Derry	26%	40%	16%	11%	1%
Dover	23%	59%	23%	19%	2%
Exeter	24%	50%	18%	14%	2%
Franklin	24%	79%	31%	35%	3%
Keene	22%	63%	27%	24%	2%
Laconia	21%	80%	26%	27%	3%
Lancaster	23%	84%	34%	41%	6%
Lebanon	22%	80%	22%	19%	2%
Littleton	22%	81%	33%	38%	5%
Manchester	26%	64%	22%	21%	2%
Nashua	26%	52%	17%	15%	1%
North Conway	20%	87%	32%	40%	6%
Peterborough	26%	65%	20%	17%	3%
Plymouth	22%	78%	31%	31%	5%
Portsmouth	19%	67%	22%	17%	2%
Rochester	25%	70%	26%	30%	3%
Wolfeboro	21%	78%	28%	31%	5%
Woodsville	20%	82%	29%	37%	5%

Note: Statistical analysis indicated that percentage of household income below \$30,000 in an area predicted 92% (r-square=0.92) of the variability in percentage of children in an area enrolled in Medicaid and 41% (r-squared=0.41) of the variability in percentage of children in an area enrolled in SCHIP. The relationship between percentage enrolled in Medicaid and percentage enrolled in SCHIP was less dramatic (r-square=0.58). All results were statistically significant (p<.01).

Continuity of insurance may be an important factor contributing to health care access, continuity of care, and use of preventive services. Table 5 provides information about the length of enrollment for children during SFY2007 by health plan type. For this report, children were tracked through the year by their unique ID within their health plan type;

children were not cross-walked between health plan types if they changed health plan type. The distribution of length of enrollment for SCHIP differs significantly from Medicaid and NH CHIS commercial. Only 29% of the children enrolled in SCHIP remained on the program for the full year compared to 56% for Medicaid and 57% for NH CHIS commercial. Thirty-eight percent of the children enrolled in SCHIP were enrolled for less than half a year. Regardless of plan type, these data suggest that the amount of health plan turnover for children was significant.

The similarity between the Medicaid and NH CHIS commercial turnover was not expected; it was expected that a higher percentage of children enrolled in NH CHIS commercial insurance plans would have longer lengths of enrollment than children enrolled in Medicaid. The NH CHIS commercial data used for this report was influenced by many factors. Since the NH CHIS does not include policies written out-of-state, if the policy subscriber (parent) of the child changed employment or insurance to a plan written out-of-state this would result in less than a full year of enrollment reported in the data. If the insurer failed to provide sufficient data to track a child between NH CHIS commercial plan changes, this would result in less than a full year of enrollment reported. Therefore, while this data is suggestive of a high degree of change in insurance status within the NH CHIS commercial population, this may be biased by limitations in the ability to track children between NH CHIS commercial plan changes.

Children covered by Medicaid or CHIS commercial averaged longer periods of enrollment by the plan (9.4 months) compared with SCHIP (7.3) during the year.

**Table 5. Child Length of Enrollment by Plan Type, SFY2007**

	Medicaid	SCHIP	NH CHIS Commercial
Total	100% (84,648)	100% (11,869)	100% (165,635)
1 to 2 months	8% (6,355)	16% (1,917)	9% (15,224)
3 to 5 months	12% (10,005)	22% (2,620)	10% (16,348)
6 to 8 months	11% (9,543)	18% (2,134)	12% (20,242)
9 to 11 months	13% (11,316)	14% (1,704)	12% (19,066)
12 months	56% (47,429)	29% (3,494)	57% (94,755)
% children enrolled 12 months with <= 1 month gap	60.8%	34.2%	62.1%
Average Length of Enrollment in Months	9.4	7.3	9.4

Table 6 presents information based on a cohort of children who were enrolled during July 2006. For this cohort of children, their disenrollment and reenrollment in the same plan type was tracked for the previous 12 months. For the 66,459 enrolled in Medicaid, 19,030 (29%) disenrolled at some point during the 12 months. This was similar to the rate for NH CHIS commercial (28%) and lower than the rate for SCHIP (52%). For the 19,030 children enrolled in Medicaid who disenrolled during the year, 4,127 (22%) would reenroll in Medicaid later in the year. For the 3,777 children in SCHIP who disenrolled during the year, 390 (10%) would reenroll in SCHIP later in the year and for the 36,633 NH CHIS commercial children who disenrolled during the year, 6,537 (18%) would reenroll in a NH CHIS commercial plan later in the year. Therefore, children in Medicaid or CHIS commercial were about twice as likely to reenroll in the same plan type compared to children in SCHIP.

**Table 6. Child Disenrollment and Reenrollment by Plan Type, SFY2007**

	<b>Medicaid</b>	<b>SCHIP</b>	<b>NH CHIS Commercial</b>
Members with enrollment in July 2006	66,459	7,269	131,388
Disenrolled during SFY2007	19,030	3,777	36,633
% Disenrolled	29%	52%	28%
Disenrolled and then reenrolled during SFY2007	4,127	390	6,537
% Reenrolled	22%	10%	18%

The SCHIP disenrollment rate is consistent with the nature of SCHIP, that provides temporary coverage until the family acquires other health insurance. A higher disenrollment rate for SCHIP is consistent with other studies of disenrollment from SCHIP.<sup>25</sup> The NH CHIS commercial rate of re-enrollment is likely underreported and should be viewed with caution because, as mentioned previously, NH children covered by policies written out-of-state are not included in the database.

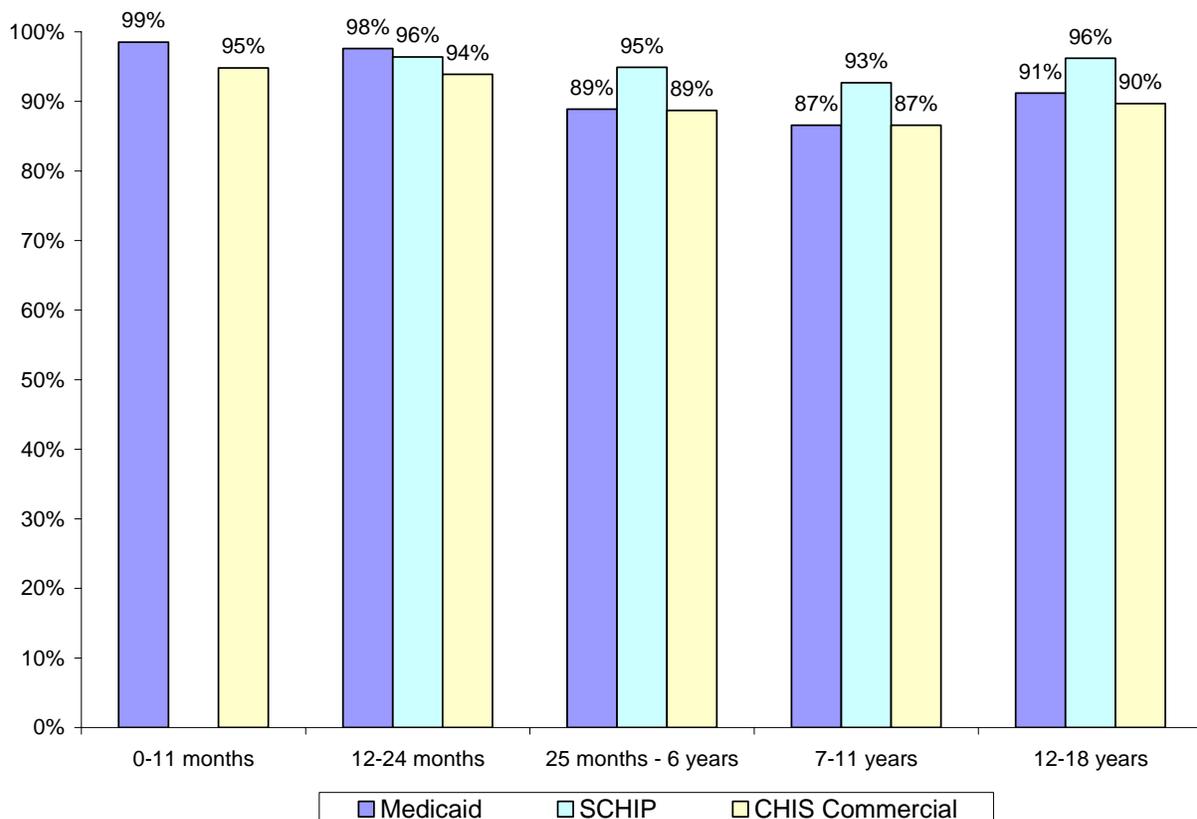
Disenrollment and reenrollment in a different plan type was considered as a possible measure for this study; at this time the data does not support the measure. It was not possible to adequately track whether children disenrolled from Medicaid or SCHIP later reenrolled in NH CHIS commercial, or disenrolled from NH CHIS commercial and later reenrolled in SCHIP or Medicaid. However, a future study is being planned that will focus on how disenrollment and reenrollment in the Medicaid population varies by different demographic factors.

## Access to Primary Care Practitioners

Children and adolescents' access to primary care practitioners is a NCQA HEDIS measure. NCQA HEDIS measures the percentage of children age 12 through 24 months old and 25 months through 6 years old, with at least one primary care practitioner visit during the current year (one year measure), and the percentage of children 7 through 11 years old and 12 through 19 years old with at least one visit during the current or prior year (two year measure). For this report, a measure for infant through 11 months of age was added and the age group 12–19 years was modified to 12–18 years for consistency with the definition of children (0–18) used in all other NH CHIS reporting. All measures were based on children continuously enrolled during the year (zero or one month gap in coverage during study period). The HEDIS access to primary care practitioner measure is not a measure of preventive service; the visits reported include both visits for preventive services and visits for medical illness and other problems.

Results for children and adolescents' access to primary care practitioners are reported in Figure 3 and Table 7. The primary care practitioner access rate for children age 25 months to 6 years was higher for children in SCHIP (94.9%) compared to NH CHIS commercial (88.7%) or Medicaid (88.9%).

**Figure 3. Percent of Children with Access to Primary Care Practitioner During the Year by Age, SFY2007**



For Medicaid, the rate of access to primary care practitioners ranged from a low of 86.6% for children age 7–11 years to a high of 98.5% for infants, age 0–11 months. SCHIP rates were higher than Medicaid or CHIS commercial except for Medicaid, age 12-24 months. Compared to national HEDIS rates for Medicaid managed care plans, NH Medicaid rates were higher in every age category. SCHIP rates were higher than national Medicaid or commercial rates for every age group (there is no national HEDIS SCHIP data). CHIS commercial rates were very similar to national HEDIS commercial rates.

**Table 7. Percent of Children with Access to Primary Care Practitioner by Plan Type, SFY2007**

Note: 95% confidence intervals (CI) in parentheses

New Hampshire Measurement Based on Administrative Claims Data			
Age Group	Medicaid	SCHIP	NH CHIS Commercial*
0–11 months	98.5% (97.6-99.4)	NA	94.8% (92.7-97.0)
12–24 months	97.6% (97.1-98.1)	96.4% (90.5-100)	93.9% (93.1-94.7)
25 months–6 years	88.9% (88.4-89.4)	94.9% (93.5-96.4)	88.7% (88.2-89.1)
7–11 years	86.6% (86.0-87.2)	92.7% (90.4-94.9)	86.6% (86.1-87.1)
12–18 years	91.2% (90.7-91.6)	96.2% (94.9-97.5)	89.7% (89.4-90.0)
National 2007 NCQA Managed Care Plan HEDIS Reporting Year			
Age Group	Medicaid	Commercial	
12–24 months	94.1%	97.0%	
25 months–6 years	84.9%	89.3%	
7–11 years	85.9%	86.6%	
12–19 years	83.2%	89.2%	

Notes: Indemnity/TPA plans were excluded from NH CHIS commercial rates. Consistent with NCQA HEDIS reporting for ages 7-11 and 12-18 the measure is a 2-year measure (primary care visit within the current or prior year). NA: SCHIP does not cover children under the age of one (in NH, infants in the federal poverty level group for SCHIP are covered under Medicaid).

Trends in access to primary care practitioners were evaluated. Nationally, NCQA HEDIS data indicate that primary care access increased by 1.7% for Medicaid managed care for each age group between 2006 and 2007. For NH Medicaid and CHIS commercial, there were no significant trends (ranged from -1% to +1%) between FY2006 and FY2007 in primary care access measures. For SCHIP, there was no significant trend for younger children but a statistically significant increase for children age 7-11 (+7%) and children age 12-18 (+4%).

Table 8 provides information on newly enrolled children and the length of time between enrollment and the first visit to a primary care practitioner. For Medicaid, SCHIP, and NH CHIS commercial, infants 0–11 months and toddlers 12–24 months had a primary care practitioner visit in a shorter time period after enrollment compared to older children. Within Medicaid, newly enrolled infants age 0–11 months averaged 0.7 months to a first visit, newly enrolled toddlers age 12–24 months averaged 1.6 months to a first visit.

**Table 8. Average Number of Months from Enrollment to First Primary Care Practitioner Visit for New Enrollees by Plan Type, SFY2007**

*Note: Number of children with continuous enrollment used for this measure in parentheses*

<b>Age Group</b>	<b>Medicaid</b>	<b>SCHIP</b>	<b>NH CHIS Commercial</b>
0–11 months	0.7 (2,809)	NA	0.4 (1,964)
12–24 months	1.6 (376)	0.8 (187)	0.9 (803)
25 months–6 years	2.1 (1,273)	1.5 (428)	1.8 (2,226)
7–11 years	2.3 (1,011)	1.7 (388)	2.0 (2,012)
12–18 years	2.2 (1,292)	1.7 (479)	2.0 (2,910)

New enrollees in NH CHIS commercial and SCHIP had a primary care practitioner visit after enrollment in a shorter time compared to enrollees in Medicaid. For toddlers age 12–24 months, new enrollees in SCHIP or NH CHIS commercial accessed primary care practitioners within less than a month of enrollment, while new enrollees in Medicaid accessed care within 1.6 months of enrollment. A similar pattern was found for older age groups. Overall, it appears that children enrolled in SCHIP accessed primary care practitioners in a shorter time from enrollment compared to children in either Medicaid or NH CHIS commercial plans.

To summarize the results for this section, children in SCHIP had higher rates of access to primary care practitioners than children in Medicaid or NH CHIS commercial plans. Children in SCHIP also accessed a primary care practitioner sooner after enrollment compared with children in Medicaid or NH CHIS commercial plans. Compared to national HEDIS rates, Medicaid and SCHIP had higher rates while CHIS commercial was similar to national commercial rates.

The HEDIS access to primary care practitioners is not a measure of preventive service; the visits reported include both visits for preventive services and visits for medical illness and other problems. Measurement of well-child preventive visits is reported in the next section.

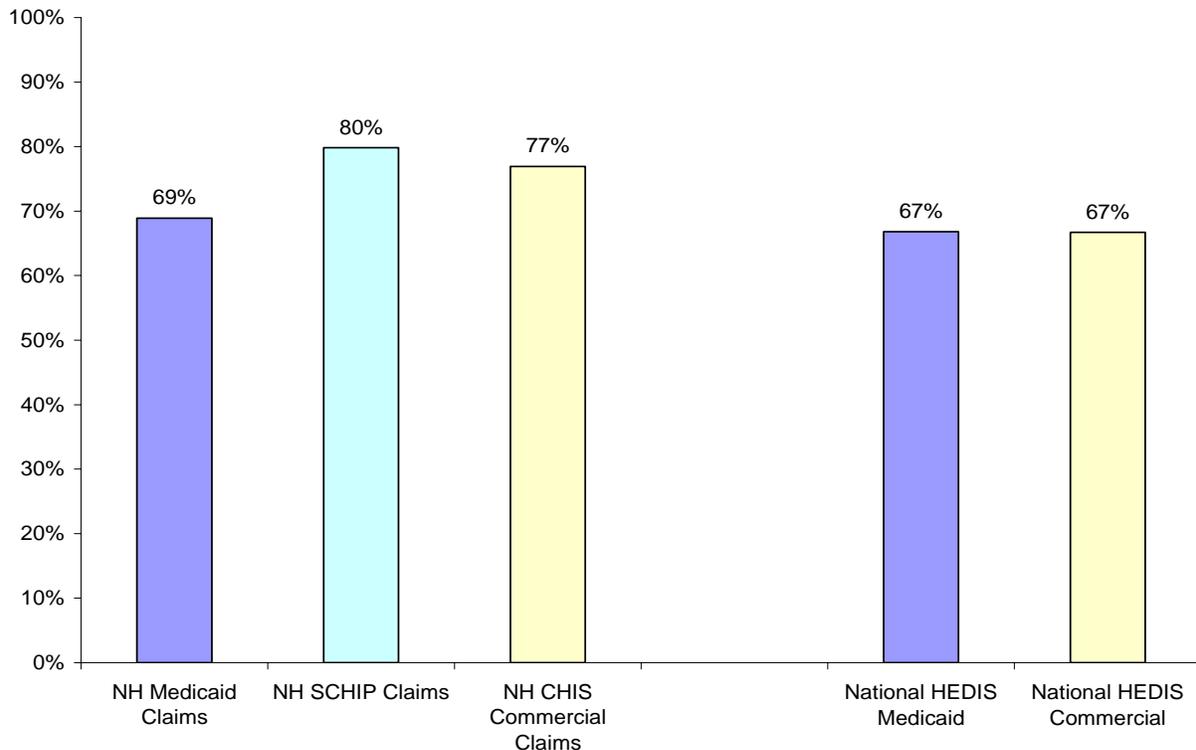
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## Well-Child Visits

The number of completed well-child visits is a NCQA HEDIS use of service measure. These HEDIS measures are based on specific codes used to identify the visit as preventive in nature and, therefore, are distinguished from the access to primary care practitioner measure reported in the previous section. NCQA HEDIS reports a one-year measure for children age 3–6 years, a one-year measure for adolescent children age 12–21 years, and the distribution of visits during the first 15 months of life. For this report, a well-child measure for children age 16–35 months and children age 7–11 years was added, and the age 12–19 years measure was modified to 12–18 years for consistency with the definition of children used in this study. All measures are based on continuous enrollment for the study period (zero or one month gap in coverage during study period).

Figure 4 and Table 9 provide well-child visit rates by plan type. For each plan type, well-child visit rates declined with age; for example, within Medicaid 87.4% of children age 16–35 months had a well-child visit compared to 48.5% of adolescent children age 12–18 years. By plan type, rates of well-child visits were higher for SCHIP and NH CHIS commercial compared to Medicaid for each age group. The well-child visit rate for children age 3–6 years was higher for children in SCHIP (79.8%) and NH CHIS commercial (76.9%) compared to Medicaid (68.9%).

**Figure 4. Percent of Children Age 3 to 6 Years with a Well-Child Visit During the Year, SFY2007**



For this measure, children 3–6 years enrolled in Medicaid, SCHIP and NH CHIS commercial were all higher than both national Medicaid and commercial HEDIS rates. Rates of 6 or more well-child visits in the first 15 months of life were higher in NH Medicaid (66%) than the national Medicaid HEDIS rate (55.6%) but the NH CHIS commercial rate (67%) was lower than the national commercial HEDIS rate (72.9%). The SCHIP rate (73%) was similar to the national commercial HEDIS rate.

**Table 9. Percent of Children With a Well-Child Visit to a Primary Care Practitioner by Plan Type, SFY2007**

Note: 95% confidence intervals (CI) in parentheses

Measurement Based on NH CHIS Administrative Claims Data			
Age Group	Medicaid	SCHIP	NH CHIS Commercial
16–35 months	87.4% (86.5-88.3)	94.1% (90.8-97.5)	88.7% (87.8-89.5)
3–6 years	68.9% (68.0-69.7)	79.8% (76.9-82.6)	76.9% (76.2-77.5)
7–11 years	52.1% (51.3-53.0)	62.3% (59.4-65.2)	58.3% (57.7-58.9)
12–18 years	48.5% (47.7-49.2)	54.6% (52.2-57.1)	53.7% (53.2-54.1)
First 15 Months of Life, denominator (see table note)	3,428	342	3,272
0 visits	2% (59)	0% (1)	4% (147)
1 visit	1% (38)	1% (2)	1% (36)
2 visits	3% (90)	1% (3)	1% (33)
3 visits	5% (172)	2% (8)	3% (92)
4 visits	9% (317)	8% (28)	6% (190)
5 visits	15% (506)	15% (50)	18% (597)
6 or more visits	66% (2,246)	73% (250)	67% (2,177)
National 2007 NCQA Managed Care Plan HEDIS Reporting Year			
Age Group	Medicaid	Commercial	
3–6 years	66.8%	66.7%	
12–21 years	43.6%	40.3%	
First 15 Months of Life			
0 visits	3.8%	1.9%	
1 visit	2.6%	1.1%	
2 visits	3.6%	1.5%	
3 visits	6.1%	2.7%	
4 visits	11.0%	5.5%	
5 visits	17.3%	14.3%	
6 or more visits	55.6%	72.9%	

Note: The HEDIS Well-child Visit During the First 15 months of Life measure tracks for visits for continuous enrolled children from 31 days to 15 months of age - up to 6 or more visits. The recommended EPSDT program schedule calls for 7 visits: by 1 month, 2-3 months, 4-5 months, 6-8 months, 9-11 months, 12 months, and 15 months. SCHIP does not cover children under the age of one (in NH, infants in the federal poverty level group for SCHIP are covered under Medicaid). For the measure, SCHIP data were linked to Medicaid data in order to report on children initially covered under Medicaid up to age one, then under SCHIP up to 15 months. Therefore, for this measure the SCHIP column is a combination of Medicaid and SCHIP for the 185-300% of federal poverty level group. This was done so that this income group could be represented in the measure. Indemnity/TPA plans were excluded from NH CHIS Commercial.

Trends in well-child visits were evaluated. Nationally, from 2006 to 2007, NCQA HEDIS data indicate that well-child visits rates for Medicaid managed care increased by about 3% for age 3-6 and 12-21 year age groups and by 7% for well-child visits during the first 15 months of life (6 or more visits). For NH Medicaid, SCHIP, and CHIS commercial there were no statistically significant trends between FY2006 and FY2007 in well-child visit rates for most age groups (range -2% to +2%). An exception was the increase from 46.3% to

48.5% in the Medicaid age 12-18 well-child visit rate, that reached statistical significance due to the large number of children included in the rate.

In sum, results reported in this section indicate that children enrolled in SCHIP or NH CHIS commercial had higher rates of well-child visits compared to children enrolled in Medicaid; NH Medicaid rates were higher than national HEDIS data from Medicaid managed care plans.

## Effectiveness of Care Management Measures

Three NCQA HEDIS effectiveness of care measures were evaluated: use of appropriate medications for children with asthma, appropriate testing for children with pharyngitis, and appropriate treatment for children with upper respiratory infection (URD). All of these measures incorporate the NH CHIS pharmacy claims data. All measures are based on continuous enrollment for the study period (zero or one month gap in coverage during study period).

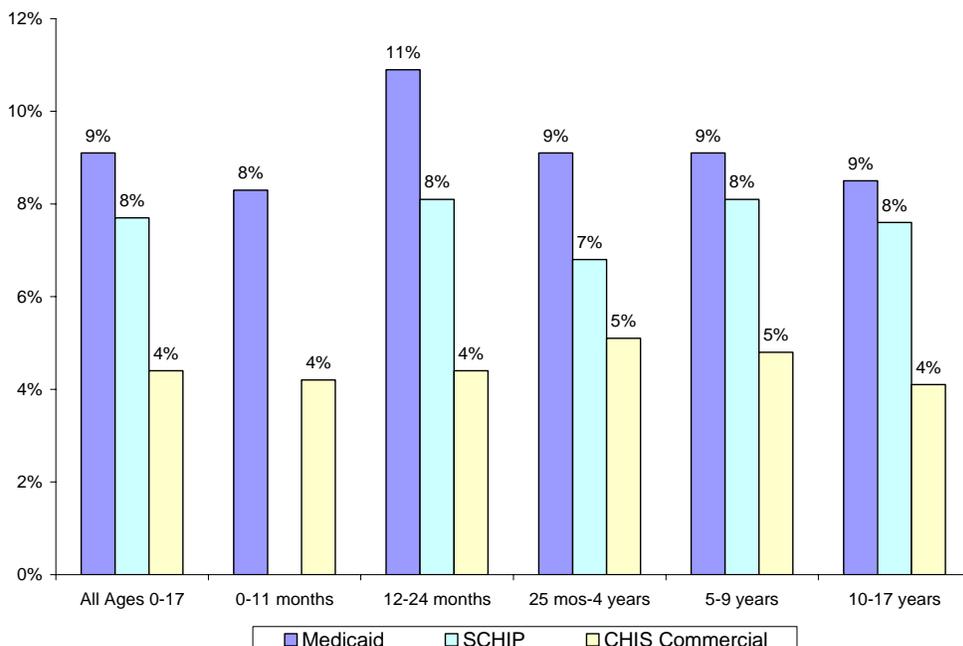
### Asthma

The appropriate treatment of asthma HEDIS measure determines members with “persistent” asthma who were appropriately prescribed medication during the measurement year. Appropriate medications are those acceptable for long-term control of persistent asthma and defined by HEDIS specifications as cromolyn sodium, inhaled corticosteroids, leukotriene modifiers, methylxanthines, and nedocromil. This is consistent with national recommendations for quality asthma care.<sup>26</sup> Because it is a two-year measure, this is the first report to measure the effectiveness of medication care for the children in the NH CHIS study population.

Figure 5 and Table 10 provide asthma prevalence and use of appropriate medication rates. For continuously enrolled children, the prevalence rate of asthma in Medicaid (9.1%) was double the NH CHIS commercial rate (4.4%) and higher than the rate for SCHIP (7.7%). For Medicaid, 4,376 children with continuous enrollment were identified with asthma.

**Figure 5. Prevalence of Asthma by Age and Plan Type, SFY2007**

*Note: NH SCHIP does not cover children age 0–11 months*



About one in four (1,199) of the children enrolled in Medicaid identified with asthma met the strict HEDIS criteria for continuous enrollment and persistent asthma; 838 children in

CHIS commercial and only 46 children in SCHIP met the criteria. Children with persistent asthma are not identified to estimate prevalence of persistent asthma, but instead to provide a denominator to assess use of appropriate asthma medication. Based on claims, 94.4% of children in Medicaid and 97.1% of the children in CHIS commercial identified with “persistent” asthma used appropriate controller medications. The rate was lower in SCHIP (91.3%) but the difference was not statistically significant due to the small number of children in SCHIP that met the HEDIS criteria.

NH Medicaid’s rates for appropriate medication use were higher than the national HEDIS Medicaid rates children ages 5–9 and 10–17\* (the age groups with comparison data).

**Table 10. Prevalence of Asthma, Persistent Asthma, and Use of Appropriate Medications to Control Asthma Among Children by Plan Type, SFY2007**

Measurement Based on NH CHIS Administrative Claims Data			
Measure / Age Group	Medicaid	SCHIP	NH CHIS Commercial
<b>Prevalence of Asthma, Rate (Number with Asthma)</b>			
All Ages	9.1% (4,376)	7.7% (276)	4.4% (3,732)
0–11 months	8.3% (96)	NA	4.2% (22)
12–24 months	10.9% (708)	8.1% (18)	4.4% (317)
25 mos–4 years	9.1% (537)	6.8% (28)	5.1% (408)
5–9 years	9.1% (1,298)	8.1% (84)	4.8% (1,077)
10–17 years	8.5% (1,737)	7.6% (146)	4.1% (1,908)
<b>Children identified with “persistent” asthma using HEDIS criteria</b>			
All Ages	1,199	46	838
0–11 months	NA	NA	NA
12–24 months	77	0	24
25 mos–4 years	120	1	93
5–9 years	411	16	267
10–17 years	524	29	454
<b>Use of Appropriate Medications for Children with “persistent” asthma (95% CI)</b>			
All Ages	94.4% (93.1-95.8)	91.3% (82.1-100)	97.1% (95.9-98.3)
0–11 months	NA	NA	NA
12–24 months	96.3% (91.5-100)	NSD	100.0% (97.9-100)
25 mos–4 years	94.5% (90.1-98.9)	NSD	98.9% (96.3-100)
5–9 years	97.2% (95.5-98.9)	NSD	99.3% (98.0-100)
10–17 years	92.1% (89.8-94.4)	NSD	95.4% (93.3-97.4)
<b>National 2006 NCQA Managed Care Plan HEDIS Reporting Year</b>			
<b>Age Group</b>	<b>Medicaid</b>	<b>Commercial</b>	
5–9 years	89.6%	96.4%	
10–17 years	87.0%	92.9%	

NA: SCHIP does not cover children under the age of one. HEDIS “persistent” asthma algorithm requires two years of continuous enrollment and claims to select a child with “persistent” asthma. NSD: not reported due to insufficient data.

### Pharyngitis

The appropriate testing for children with pharyngitis HEDIS measure determines the percentage of continuously enrolled children 2–18 years of age diagnosed with pharyngitis and dispensed an antibiotic who also received a streptococcus (strep) test. Results from NH

\* Rate based on ages through age 17 is an NCQA HEDIS specification. For this measure, NCQA counts 18 year olds with adults.

CHIS data are provided in Table 11. Based on NH CHIS claims data, the rate of appropriate strep testing for children with pharyngitis was higher for SCHIP (78.5%) than for NH CHIS commercial (75.7%) or Medicaid (70.1%).

Compared to national HEDIS measures, SCHIP and NH CHIS commercial were higher than the national commercial rate and NH Medicaid was higher than the national Medicaid HEDIS rate.

**Table 11. Percent of Continuously Enrolled Children with Appropriate Testing for Pharyngitis by Plan Type, SFY2006**

Note: 95% confidence intervals (CI) in parentheses

Measurement Based on NH CHIS Administrative Claims Data			
Age Group	Medicaid	SCHIP	NH CHIS Commercial
2-18 years (denominator)	2,187	158	2,608
2-18 years	70.1% (68.1-72.0)	78.5% (71.8-85.2)	75.7% (74.0-77.3)
National 2006 NCQA Managed Care Plan HEDIS Reporting Year			
Age Group	Medicaid	Commercial	
2-18 years	56.0%	72.7%	

Note: Indemnity/TPA plans were not included in NH CHIS Commercial.

### Upper Respiratory Infection

The HEDIS appropriate treatment for children with upper respiratory infection (URI) measures the percentage of continuously enrolled children 3 months to 18 years of age who were diagnosed with URI and were *not* dispensed an antibiotic prescription. Results from NH CHIS data are provided in Table 12. Based on NH CHIS claims data, the rate of appropriate medication (antibiotic not dispensed) was similar for SCHIP (86.5%), NH CHIS commercial (87.0%), and Medicaid (85.6%).

Compared to national HEDIS data for this measure, Medicaid, SCHIP and NH CHIS commercial were all higher than the national Medicaid and commercial rates.

**Table 12. Percent of Children with Upper Respiratory Infection (URI) Not Dispensed an Antibiotic, SFY2006 New Hampshire CHIS data**

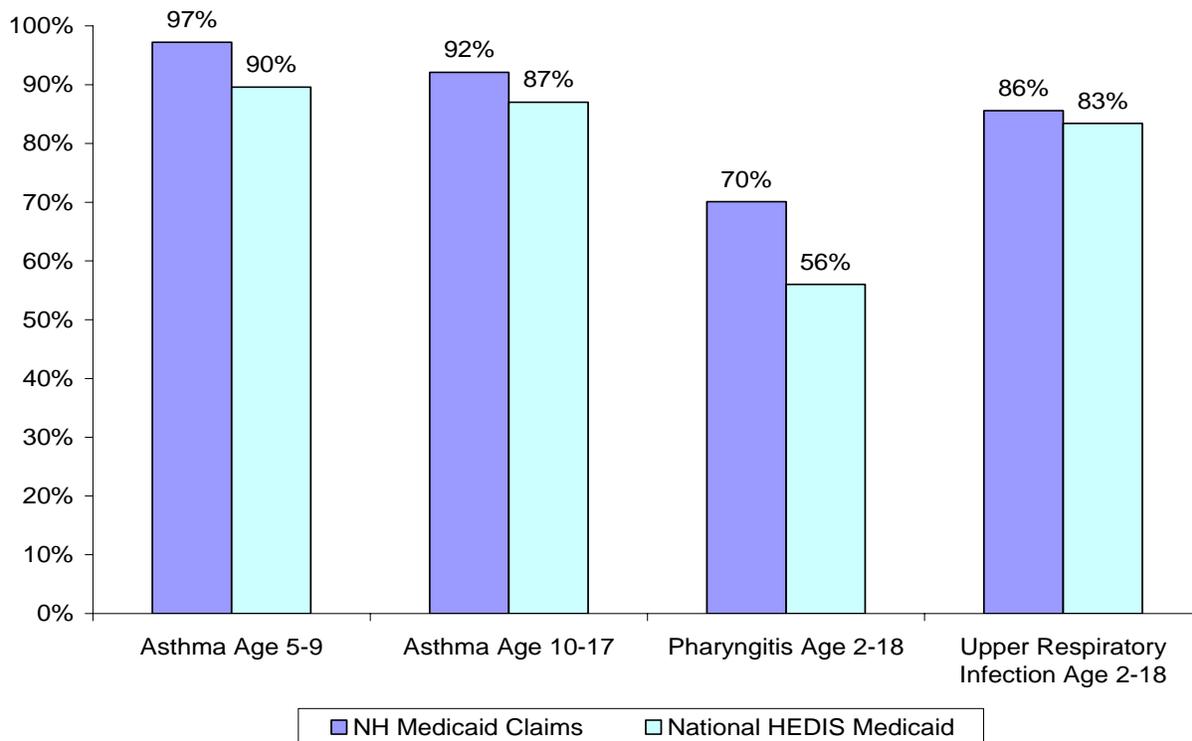
Note: 95% confidence intervals (CI) in parentheses

Measurement Based on NH CHIS Administrative Claims Data			
Age Group	Medicaid	SCHIP	NH CHIS Commercial
2-18 years (denominator)	5,098	281	4,822
2-18 years	85.6% (84.7-86.6)	86.5% (82.3-90.7)	87.0% (86.0-88.0)
National 2006 NCQA Managed Care Plan HEDIS Reporting Year			
Age Group	Medicaid	Commercial	
2-18 years	83.4%	82.8%	

Note: Indemnity/TPA plans were not included in NH CHIS Commercial.

Figure 6 summarizes the medication care measures for NH Medicaid claims compared to national HEDIS Medicaid managed care rates. For all measures, the NH Medicaid claims-based rates were higher than the HEDIS national Medicaid average.

**Figure 6. Comparison of Appropriate Medication for Children Enrolled in Medicaid. SFY2007 New Hampshire Medicaid Claims and NCQA 2006 National HEDIS Rates.**



Trends in effectiveness of care measures were evaluated. The prevalence of asthma was unchanged in the NH Medicaid and SCHIP, and decreased slightly in the study population for CHIS commercial. There was no significant increase for NH Medicaid or SCHIP in this measure between SFY2006 and SFY2007 (commercial trend could not be evaluated because SFY2006 data was insufficient to calculate rates). Nationally, NCQA HEDIS data indicate that use of appropriate medications for children with asthma increased by about 1%.

Nationally, NCQA HEDIS data indicate that the percent of children with appropriate testing for pharyngitis increased by 4% for Medicaid managed care and 3% for commercial. There were no statistically significant changes in the rate for this measure for NH Medicaid, SCHIP, or CHIS commercial.

Nationally, NCQA HEDIS data indicate that the percent of children with upper respiratory infection (URI) not dispensed an antibiotic increased by 1% for Medicaid managed care and was unchanged for commercial. There were no statistically significant changes in the rate for this measure for NH Medicaid, SCHIP, or CHIS commercial.

## Prevalence and Utilization for Mental Health Disorders

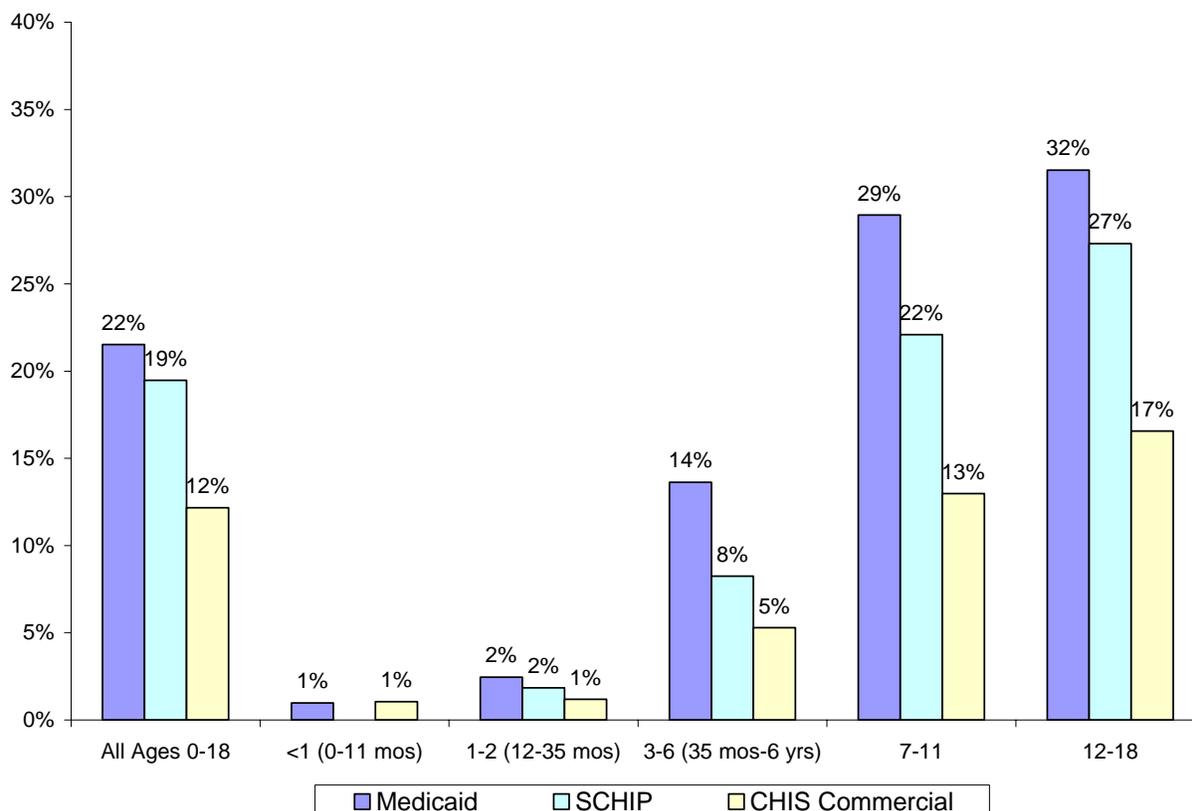
For the NH CHIS report, determination of mental health disorder was based on the diagnostic information contained in the administrative medical claims data (diagnostic codes and groupings are identified in Appendix 1 and were derived from a report prepared for the national Substance Abuse and Mental Health Services Administration (SAMHSA)). Nationally, about 20% of children are estimated to have mental health disorders with at least mild functional impairment.<sup>27</sup>

### Prevalence

Figure 7 and Table 13 summarize the prevalence of mental health disorders by age group and plan type. Among members age 0–18 enrolled in Medicaid, 21.5% had a diagnosed mental health disorder during SFY2007. The mental health disorder prevalence rate for children enrolled in Medicaid (21.5%) was higher than the prevalence rate for SCHIP (19.5%) and NH CHIS commercial (12.2%).

**Figure 7. Prevalence of Mental Health Disorders by Age and Plan Type, SFY2007**

Note: NH SCHIP does not cover children age 0–11 months



The prevalence of mental health disorders increased with age; highest prevalence rates were among teens age 12–18 in each plan type. For children age 7–11 years covered by Medicaid, the prevalence rate of mental health disorder (28.9%) was twice the prevalence rate for children covered by NH CHIS commercial (13.0%). By age group, the prevalence of

mental health disorders among children enrolled in SCHIP was higher than NH CHIS commercial but lower than Medicaid.

**Table 13. Prevalence of a Mental Health Disorder by Plan Type and Age Group, SFY2007**

Age Group	Medicaid	SCHIP	NH CHIS Commercial
Total	21.5% (14,326)	19.5% (1,413)	12.2% (15,743)
<1 (0–11 mos)	1.0% (35)	NA	1.1% (29)
1–2 (12–35 mos)	2.5% (205)	1.8% (12)	1.2% (120)
3–6 (36 mos–6 yrs)	13.6% (2,044)	8.2% (128)	5.3% (1,193)
7–11	28.9% (4,982)	22.1% (449)	13.0% (4,248)
12–18	31.5% (7,060)	27.3% (824)	16.6% (10,153)

NA: SCHIP does not cover children under the age of one.

Table 14 provides detailed prevalence rates for serious and other mental health disorder diagnoses by plan type. Among children enrolled in Medicaid, 2,495 had a serious mental health disorder identified. These included 727 children with major depression and 1,312 children with bipolar and other affective psychoses. The prevalence rate of serious mental health disorders in children enrolled in Medicaid (3.7%) was the same as SCHIP (3.7%) and higher than CHIS commercial (2.8%).

The most common mental health disorder diagnosed for all plan types was Attention Deficit Hyperactivity Disorder (ADHD). The prevalence rate of ADHD for children enrolled in Medicaid (8.4%) and SCHIP (8.2%) was higher than for children enrolled in NH CHIS commercial (4.8%).

Stress and adjustment disorders were also common in these children. The prevalence rate for stress and adjustment disorders in Medicaid (7.4%) was about 1.5 times the prevalence rate in SCHIP (4.9%) and more than 2 times the prevalence rate in the NH CHIS commercial children (3.3%). Stress and adjustment disorders include post-traumatic stress disorder. A recent study indicates that children in foster care are 5 times more likely to have post-traumatic stress disorder than the general population.<sup>28</sup>

Disturbance of conduct and disturbance of emotions were three times more prevalent in the children enrolled in Medicaid compared with the children in NH CHIS commercial\*.

These comparative results are consistent with a previous study that showed that the prevalence of parental-reported severe emotional or behavioral difficulties are higher in children covered by Medicaid compared to children covered by private insurance (9.1% vs. 3.9%).<sup>29</sup> Mental health conditions are particularly common for low-income children.<sup>30</sup>

\* Diagnosis codes utilized to define mental illness categories are provided in Appendix 1 at the end of this report. Examples of disturbance of conduct disorders include anger reactions, unsocialized aggressive disorder, tantrums, stealing, pyromania, and disruptive behaviors. Examples of disturbance of emotions include overanxious disorder, shyness, introversion, relationship and sibling jealousy, oppositional defiant disorder, and identity disorders.

**Table 14. Prevalence of Mental Health Disorders by Plan Type and Diagnostic Category, SFY2007**

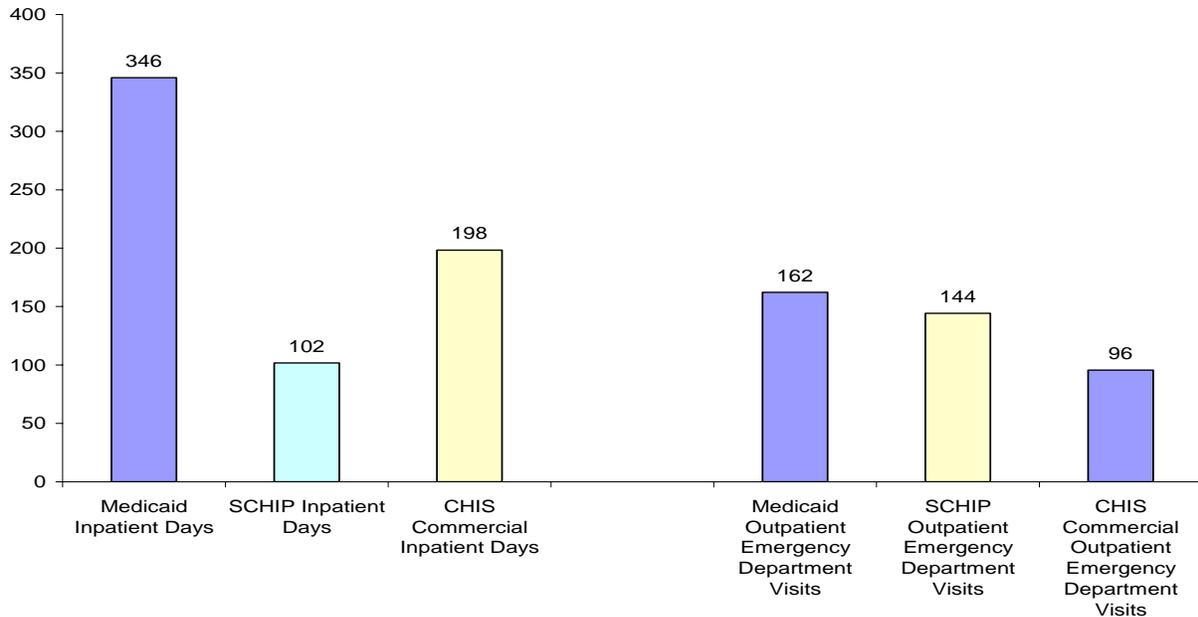
*Note: Categories are not mutually exclusive. The same child may be reported in more than one diagnostic group if the child had claims with different mental health disorder diagnoses during the year. Numbers will not add to total.*

<b>Mental Health Disorder Cohort</b>	<b>Medicaid</b>	<b>SCHIP</b>	<b>NH CHIS Commercial</b>
<b>Any Mental Health Disorder</b>	21.5% (14,326)	19.5% (1,413)	12.2% (15,743)
<b>Any Serious Mental Health Disorder</b>	3.7% (2,495)	3.7% (266)	2.8% (3,573)
Schizophrenic Disorders	0.1% (40)	0.0% (1)	0.0% (57)
Major Depression	1.1% (727)	1.5% (108)	1.5% (1,893)
Bipolar & Other Affective Psychoses	2.0% (1,312)	1.5% (107)	1.0% (1,286)
Other Psychoses	1.1% (714)	1.0% (69)	0.8% (1,026)
<b>Any Other Mental Health Disorder</b>	20.3% (13,508)	18.2% (1,321)	11.3% (14,651)
Stress & Adjustment	7.4% (4,904)	4.9% (352)	3.3% (4,273)
Personality Disorder	0.2% (116)	0.1% (9)	0.1% (112)
Disturbance of Conduct	2.6% (1,751)	1.6% (115)	0.9% (1,101)
Disturbance of Emotions	2.9% (1,963)	1.9% (139)	0.9% (1,216)
ADHD Hyperkinetic	8.4% (5,608)	8.2% (598)	4.8% (6,163)
Neurotic Disorder	4.0% (2,682)	4.5% (327)	3.5% (4,578)
Depression NEC	2.4% (1,626)	2.7% (193)	1.6% (2,121)
Other Mental Health Disorders	1.5% (998)	1.6% (118)	1.1% (1,477)

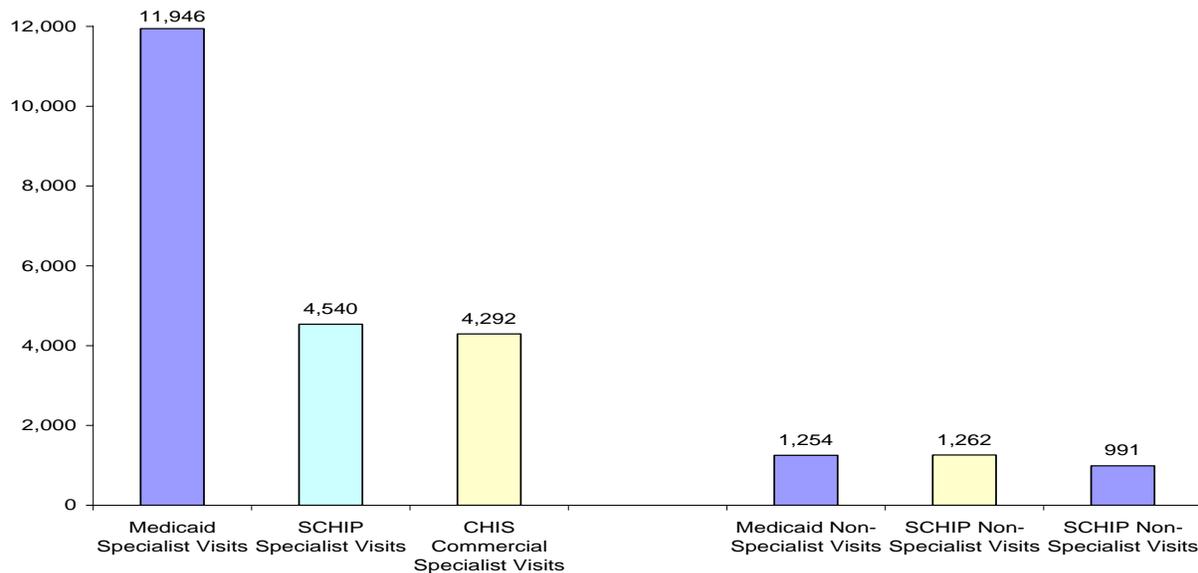
#### *Utilization Rates*

Figures 8 and 9 and Table 15 provide summary mental health service utilization rates by plan type for children with mental health disorders. Among children with mental health disorders, outpatient emergency department use rates for a mental health disorder were highest in Medicaid (162 per 1,000 members), lower in SCHIP (144 per 1,000 members), and lowest in NH CHIS commercial (96 per 1,000 members).

**Figure 8. Inpatient Days for Mental Health Disorders and Outpatient Emergency Department Mental Health Disorder Visits per 1,000 for Members with a Mental Health Disorder by Plan Type, SFY2007**



**Figure 9. Mental Health Specialist and Non-Specialist Office/Clinic Visit Rates per 1,000 Members with a Mental Health Disorder by Plan Type, SFY2007**



As indicated previously, prevalence of mental health disorders was higher for children covered by Medicaid. The comparative analysis of mental health services utilization rates used as a denominator only those children covered by Medicaid, SCHIP, or NH CHIS commercial who had a mental health disorder. For children identified with a mental health

disorder, rates of office visits with a primary care/non-specialist due to a mental health disorder diagnosis were slightly higher for Medicaid (1,254 per 1,000 members) and SCHIP (1,262 per 1,000 members), compared with NH CHIS commercial (991 per 1,000 members). For children identified with a mental health disorder, the visit rate with mental health specialists was significantly higher in Medicaid (11,946 per 1,000 members), compared to SCHIP (4,540 per 1,000 members), or NH CHIS commercial (4,292 per 1,000 members). These rate differences by plan are similar to the SFY2006 reporting.

**Table 15. Utilization for Children with a Mental Health Disorder by Plan Type, SFY2006**

	<b>Medicaid</b>	<b>SCHIP</b>	<b>NH CHIS Commercial</b>
Members with Mental Health Disorder	14,326	1,413	15,743
Average Members (Member Months / 12)	13,030	1,033	14,048
<b>Utilization Volume</b>			
Members With Mental Health Disorder Admission	453	24	325
Mental Health Disorder Inpatient Days	4,507	105	2,787
Mental Health Disorder Outpatient Emergency Department Visits	2,113	149	1,344
Mental Health Disorder Office Visits (non-specialist)*	16,332	1,303	13,919
Mental Health Disorder Specialist Visits**	155,648	4,689	60,288
<b>Utilization Rates per 1,000 Members</b>			
Mental Health Disorder Inpatient Days per 1,000	345.9	101.7	198.4
Mental Health Disorder Outpatient Emergency Department Visits per 1,000 members	162.2	144.3	95.7
Mental Health Disorder Office Visits (non-specialist) per 1,000 members*	1,253.5	1,261.5	990.8
Mental Health Disorder Specialist Visits per 1,000 members**	11,945.8	4,539.6	4,291.6

\*Further review of data from the previous NH CHIS CHIP study report indicated the need for a correction to the definition of non-specialist office visits for mental health disorders. Therefore, the counts and rates for non-specialist office visits in the SFY2007 are significantly lower than the SFY2006 report.

\*\*The NH Medicaid benefit limit for psychotherapy is 12 visits per year for ARNP's and other non-physician providers. For this CHIP report the definition of mental health specialist visits was based on provider specialty code and included a broad range of mental health specialists (e.g., psychiatry, psychology, licensed clinical social workers, mental health centers, licensed social workers, licensed counselors, and clinical nurse specialists with psychology identified). This definition includes specialists that may have provided mental health services that are not strictly defined as psychotherapy. This potentially results in mental health specialist visit rates higher than the NH Medicaid 12-visit psychotherapy limit.

Table 16 provides mental health service utilization rates for children enrolled in Medicaid by diagnostic cohort. Children enrolled in Medicaid with serious mental health disorders had inpatient use rates that were 5 times higher than children enrolled in Medicaid with other mental health disorders (1,715 vs. 349 per 1,000 members). Children enrolled in Medicaid with a serious mental health disorder were almost three times as likely to have an outpatient emergency department visit for a mental health disorder compared with children with other mental health disorders (472 vs. 167 per 1,000 members). Visit rates with mental health specialists were also higher for children with serious mental health disorders compared with children with other mental health disorders (19,647 vs. 11,810).

Differences in mental health service utilization rates by plan type and specific mental health disorder diagnostic cohort were compared. Children enrolled in Medicaid had consistently higher rates of mental health service utilization compared with children enrolled in SCHIP or NH CHIS commercial (Table 15). Inpatient days, outpatient emergency department visits, mental health specialist visits, and non-specialist mental health disorder office visit rates were all higher in Medicaid compared with SCHIP or NH CHIS commercial. The most dramatic differences were in the use of mental health specialist visits; the Medicaid rates ranged from 2-3 times higher than the SCHIP and NH CHIS commercial rates depending on diagnostic cohort.

**Table 16. Utilization Rates for Children Enrolled in Medicaid with Mental Health Disorders, SFY2007**

*Note: Categories are not mutually exclusive. The same child may be reported in more than one diagnostic group if the child had claims with different mental health disorder diagnoses during the year. Numbers will not add to total.*

<b>Mental Health Disorder Cohort</b>	<b>Members with Mental Health Disorder</b>	<b>Mental Health Disorder Inpatient Days per 1,000 Members</b>	<b>Mental Health Disorder Outpatient Emergency Department Visits per 1,000 Members</b>	<b>Mental Health Disorder Office Visits (non-specialist) per 1,000 Members</b>	<b>Mental Health Disorder Specialist Visits per 1,000 Members</b>
<b>Any Serious Mental Health Disorder</b>	2,495	1,715	472	1,832	19,647
Schizophrenic Disorders	40	10,737	1,675	2,636	31,606
Major Depression	727	2,654	614	1,817	21,326
Bipolar & Other Affective Psychoses	1,312	2,087	596	2,006	22,778
Other Psychoses	714	2,246	482	1,747	16,364
<b>Any Other Mental Health Disorder</b>	13,508	349	167	1,258	11,810
Stress & Adjustment	4,904	620	180	853	15,161
Personality Disorder	116	5,792	1,295	1,888	24,840
Disturbance of Conduct	1,751	865	313	1,507	15,248
Disturbance of Emotions	1,963	1,182	325	1,449	19,554
ADHD Hyperkinetic	5,608	392	206	2,065	11,564
Neurotic Disorder	2,682	926	407	1,442	14,531
Depression NEC	1,626	1,389	587	1,875	14,907
Other Mental Health Disorders	998	988	324	1,787	9,078

\*Review of data from the previous NH CHIS CHIP study report indicated the utilization rates in this table were computed incorrectly. These SFY2007 reported rates are corrected and will appear lower than the SFY2006 report.

### *Psychotropic Medication Utilization*

The previous SFY2006 NH CHIS study of children did not evaluate psychotropic medication use but recommended an evaluation for the next study. Children enrolled in Medicaid and SCHIP have pharmacy claims included in the CHIS administrative claims. For children enrolled in CHIS commercial not all pharmacy claims data is linked (some children may not have pharmacy coverage as a benefit and some children may be in plans where the pharmacy claims data cannot be linked). For the evaluation of use of psychotropic medication, CHIS commercial was limited to children with a mental health disorder who had pharmacy data that could be linked (10,668 of 15,743 children).

Table 17 summarizes the prevalence of psychotropic medication use by plan and age for children with a mental health disorder. Among 14,326 Medicaid members (13,030 average

members) with a mental health disorder, 7,227 had any psychotropic medication use, a prevalence rate of 56%. Among children with a mental health disorder, the prevalence of children using a psychotropic medication was the same in Medicaid (56%) and CHIS commercial (56%). The SCHIP rate (73%) was higher and may be influenced by the member month denominator used for this measure.<sup>§ ‡</sup>

For each plan type, use of psychotropic medication for mental health disorder increased with age. For children with mental health disorders covered by Medicaid, the highest rate of any psychotropic medication was among teens age 12-18 (73%) as it is for SCHIP and CHIS commercial.

**Table 17. Prevalence of Any Use of Psychotropic Medication for Children with a Mental Health Disorder by Age and Plan Type, SFY2007**

Age Group	Medicaid	SCHIP	NH CHIS Commercial
Total All Ages	56% (7,227)	73% (752)	56% (5,328)
<1 (0–11 mos)	0% (0)	NA	0% (0)
1–2 (12–35 mos)	9% (17)	0% (0)	0% (0)
3–6 (36 mos–6 yrs)	25% (482)	36% (33)	18% (134)
7–11	57% (2,599)	70% (224)	52% (1,347)
12–18	73% (4,129)	81% (495)	64% (3,847)

NA: SCHIP does not cover children under the age of one.

Note: Average members (member months / 12) for the members with a mental health disorder was used as denominator for prevalence rates. If unique members were used as denominator, the rates for Medicaid (50%), SCHIP (53%), and CHIS commercial (50%) were similar. CHIS Commercial is based on subset of children (10,668) for which pharmacy data could be linked.

Table 18 summarizes the prevalence of any use of psychotropic medications among children with a mental health disorder by medication type. Among 14,326 children enrolled in Medicaid with a mental health disorder, 20% used an antidepressant and 32% used a stimulant during the year.

Among children with a mental health disorder using psychotropic medication, Medicaid children average more use (282 days per year) compared to SCHIP (203 days per year) or CHIS commercial (228 days per year). This could be due to a higher level of severity or multiple coexisting mental health disorders among Medicaid children compared with SCHIP or CHIS commercial children with a mental health disorder.

<sup>§</sup> Using unique members as the denominator, the prevalence of psychotropic medication use among children with mental health disorders is similar between each of the plan types.

<sup>‡</sup> The prevalence of psychotropic drug use was based on members with a mental health disorder diagnosis only. Pharmacy claims data does not contain diagnosis coding. If the study is not restricted to children with a mental health disorder diagnosis, the number of Medicaid children using psychotropic medication increases from 7,227 to 9,883, SCHIP increases from 752 to 1,072, and CHIS commercial increases from 5,328 to 7,644.

**Table 18. Prevalence of Any Use of Psychotropic Medication for Children with a Mental Health Disorder by Drug Type and Plan Type, SFY2007**

*Note: Categories are not mutually exclusive. The same child may be reported in more than one drug category if the child had claims for different psychotropic drugs during the year. Numbers will not add to total.*

<b>Psychotropic Drug Category</b>	<b>Medicaid</b>	<b>SCHIP</b>	<b>NH CHIS Commercial</b>
Total All Types	56% (7,227)	73% (752)	56% (5,328)
Antidepressants	20% (2,635)	27% (274)	24% (2,266)
Tranquilizers	12% (1,616)	10% (104)	7% (644)
Stimulants	32% (4,130)	44% (453)	32% (3,045)
Anxiolytics	5% (652)	6% (67)	6% (561)
Other CNS Agents	11% (1,378)	11% (118)	8% (802)

NA: SCHIP does not cover children under the age of one.

Note: Average members (member months / 12) for the members with a mental health disorder was used as denominator for prevalence rates. If actual unique members is used as a denominator the rates for Medicaid (50%), SCHIP (53%), and CHIS commercial (50%) were similar. CHIS Commercial is based on subset of children (10,668) for which pharmacy data could be linked. Classification of drug types is based on the national drug code (NDC) on claims grouped into therapeutic classes using REDBOOK™.

Table 19 summarizes by diagnostic cohort Medicaid children with any psychotropic medication use. For example, among 4,584 children enrolled in Medicaid with attention-deficit hyperactivity disorder (ADHD) diagnosis, 3,650 used a stimulant medication at some time during the year. Children with severe mental health disorders had higher medication use rates compared with children with other mental health disorders. For example, children enrolled in Medicaid with serious mental health disorders averaged 360 days' supply during the year, while children with other mental health disorders averaged 280 days' supply during the year. For the serious and other mental health disorder categories, children enrolled in Medicaid averaged more days' supply during the year compared with children enrolled in SCHIP or CHIS commercial plans. This was true within each diagnostic cohort studied.

**Table 19. Prevalence of Any Use of Psychotropic Medication for Children Enrolled in Medicaid with Mental Health Disorders by Drug Type, SFY2007**

*Note: Categories are not mutually exclusive. The same child may be reported in more than one mental health disorder category and in more than one drug type if the child had claims for different mental health disorders and claims for different psychotropic drug use during the year. Numbers in columns or rows do not add to total. Because pharmacy claims data do not contain diagnosis coding it is not possible to determine the mental health disorder being treated by the specific medication. The medication reported in the disorder cohort (row) may have been used to treat that disorder or may have been used to treat another co-existing mental health disorder.*

<b>Mental Health Disorder Cohort</b>	<b>Members with Mental Health Disorder and Psychotropic Medication Use</b>	<b>Anti-depressant</b>	<b>Tranquilizer</b>	<b>Stimulant</b>	<b>Anxiolytic</b>	<b>Other CNS Agent</b>
<b>Any Mental health disorder</b>	7,227	2,635	1,616	4,130	652	1,378
<b>Any Serious Mental Health Disorder</b>	1,732	915	939	606	233	353
Schizophrenic Disorders	33	24	30	6	7	10
Major Depression	500	402	147	109	65	74
Bipolar & Other Affective Psychoses	1,037	497	688	394	129	252
Other Psychoses	434	168	255	173	77	92
<b>Any Other Mental Health Disorder</b>	6,842	2,467	1,390	4,044	604	1,306
Stress & Adjustment	1,656	841	436	708	200	341
Personality Disorder	79	64	43	16	18	16
Disturbance of Conduct	883	332	352	447	103	197
Disturbance of Emotions	1,073	454	415	566	100	249
ADHD Hyperkinetic	4,584	1,017	839	3,650	246	975
Neurotic Disorder	1,538	1,013	406	537	238	285
Depression NEC	1,134	893	271	283	130	179
Other Mental Health Disorders	449	200	128	207	71	127

*SFY2006 – SFY2007 Mental Health Disorder Trends*

Trends in rates were evaluated. There was no significant change in the prevalence rates of mental health disorders for NH Medicaid, SCHIP, or CHIS commercial. However, based on the administrative claims diagnoses, Medicaid covered 84 more children with serious mental health disorders and 556 more children with other mental health disorders in SFY2007 compared to SFY2006. The prevalence rate of children identified with serious mental health disorder (including major depression) increased in CHIS commercial, while the prevalence rate of children identified with other mental health disorders declined.

Inpatient days and outpatient ED visit rates for children with a mental health disorder increased slightly in NH Medicaid and decreased slightly in the CHIS commercial. There were insufficient numbers to evaluate trends for SCHIP. For children with a mental health disorder, the proportion of children with a mental health disorder diagnosis using a psychotropic medication declined slightly in all plan types, with fewer children using antidepressants or stimulants.

## *Mental Health Disorder Summary*

Children enrolled in Medicaid with a mental health disorder diagnosis had higher use rates of all mental health services compared with NH CHIS commercial, regardless of diagnostic group in SFY2007.

The mental health specialists visit rates were significantly higher in Medicaid compared to SCHIP or NH CHIS commercial. Co-occurring mental health disorders were not evaluated for these children and it is possible that children enrolled in Medicaid with mental health disorders had greater need of specialist visits because they were more likely to have multiple mental health disorders or their disorders were more severe (a future study will examine this). Medicaid also provides a variety of non-psychotherapeutic services to children with mental health disorders.

Each year more than 800,000 children in the United States spend time in foster care as a result of abuse and neglect. States disburse about \$10 billion a year in federal and state funds to meet the needs of children placed in foster care.<sup>31</sup> Foster care children enrolled in Medicaid utilize mental health services at higher rates than other children in Medicaid.<sup>32</sup> A future study examining foster care children enrolled in NH Medicaid is in progress.

The rates reported above represent averages for all children identified with mental health disorders. Based on some preliminary work performed for a future study that will look in-depth at mental health service utilization, a small number of children may account for a large percentage of the mental health specialist visits in Medicaid (about 15% of children had 31 or more mental health specialist visits during the year). In the SCHIP or NH CHIS commercial populations, many children had no mental health specialist visits, but were instead evaluated and managed by primary care practitioners. Finally, NH CHIS commercial includes members enrolled in managed care plans and behavioral carve-out plans, that may limit specialist visits more than the Medicaid plan, that is subject to Early Periodic Screening, Diagnosis, and Treatment (EPSDT) program requirements under federal law (Title XIX of the Social Security Act) that can override state Medicaid program benefit limitations. All of these factors may contribute to the difference in specialist visit rates reported here.

By plan type the rate of members with a mental diagnosis using psychotropic medications was similar. The cohort of children with ADHD had the highest volume of psychotropic medication users and stimulants were the most common medication used. Children in Medicaid who used psychotropic medications average more day's supply of psychotropic medication compared with children enrolled in SCHIP or CHIS commercial.

## Utilization and Payments

Inpatient hospitalizations, outpatient emergency department visits, office/clinic visits, and payments per member per month (PMPM) were evaluated by age and plan type.

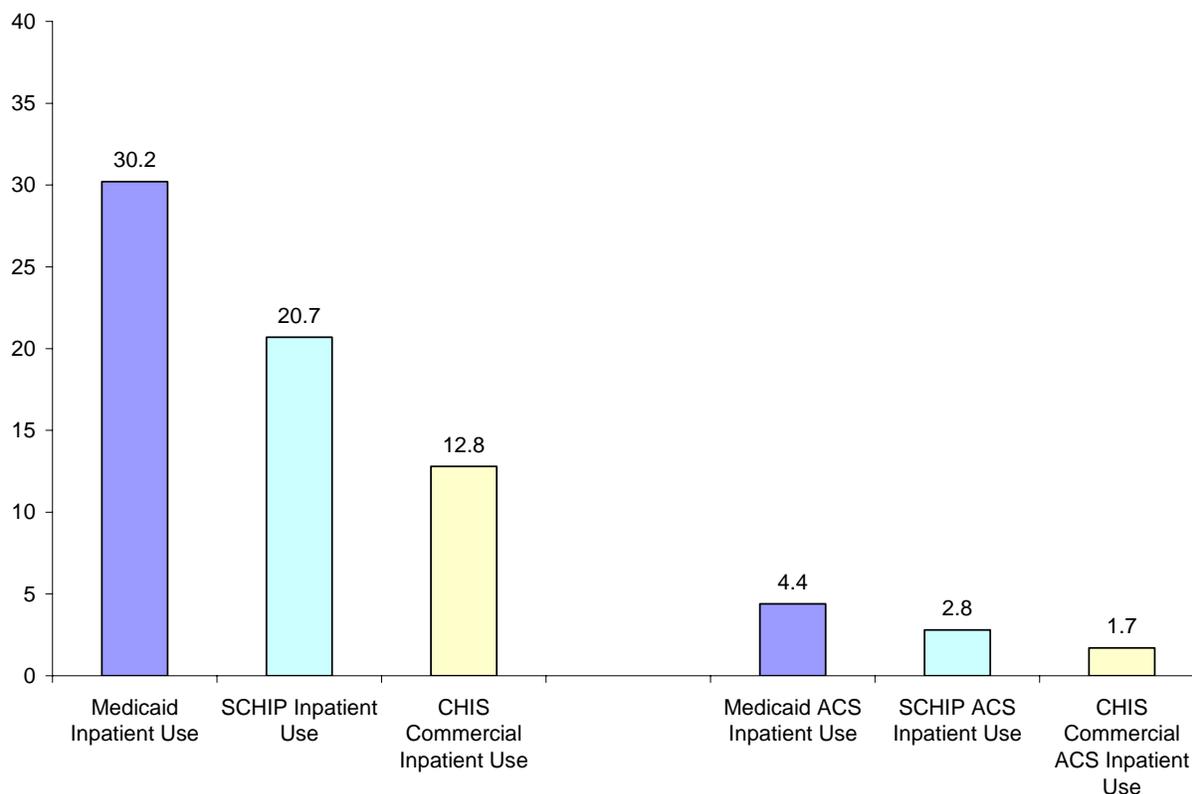
### *Inpatient hospitalization*

Inpatient hospitalization use rates are summarized in Figure 10 and Table 20. Medicaid rates were consistently higher than NH CHIS commercial rates; overall 96.1 per 1,000 Medicaid members compared to 19.1 per 1,000 CHIS commercial plan members. The overall rate is influenced by the high-use rate for newborns and infants (age 0–11 months), that are not covered in SCHIP, and in the case of infants may not be fully available in commercial data due to bundling of the babies claim with the mother. Excluding newborns and infants (age 0–11 months), the inpatient hospitalization rate for Medicaid (30.2 per 1,000 members) was higher than the SCHIP rate (20.7 per 1,000 members) or the NH CHIS commercial rate (12.8 per 1,000 members).

Excluding newborns and infants (age 0-11 months), the Medicaid rate increased by 4%, SCHIP by 2%, and CHIS commercial declined by 4% compared to SFY2006. The major driver of the increased inpatient use rate for Medicaid was a 9% increase in inpatient hospitalizations among teens age 12-18.

### **Figure 10. Inpatient Utilization Rates per 1,000 Members Age 1–18 Years, SFY2007**

*Note: Infants under 1 are not included. Inpatient ACS (Ambulatory Care Sensitive Conditions) included hospitalizations for asthma, dehydration, bacterial pneumonia, urinary tract infection, and gastroenteritis.*



**Table 20. Inpatient Hospitalization Rates Per 1,000 Members by Age and Plan, SFY2007**

Age Group	Medicaid	SCHIP	NH CHIS Commercial
Total, Age 0–18	96.1 (6,394)	20.7 (150)	19.1 (2,476)
Total excluding age 0–11 mos	30.2 (1,899)	20.7 (150)	12.8 (1,622)
<1 (0–11 mos)	1,240.0 (4,495)	NA	310.5 (857)
1–2 (12–35 mos)	38.9 (325)	40.0 (26)	18.3 (185)
3–6 (36 mos–6 yrs)	17.2 (258)	14.2 (22)	9.2 (207)
7–11	17.4 (300)	10.8 (22)	7.3 (239)
12–18	45.4 (1,016)	26.5 (80)	16.2 (991)

NA: SCHIP does not cover children under the age of one. CHIS Commercial rate for age <1 may be underreported due to commercial plans' practice of bundling newborn claim with mothers claim.

Previous studies have identified certain hospitalizations as potentially preventable or avoidable; these are sometimes referred to as Ambulatory Care Sensitive (ACS) conditions.<sup>33,34</sup> Future hospital utilization might be reduced by providing access to timely and effective outpatient care to prevent the onset of an illness or condition, by controlling acute episodic conditions, or by managing a chronic diseases. While data shown earlier in the report indicates overall good access to primary care, the ACS data indicates that for a small number of users there may be problems with access.

For five selected ACS conditions (asthma, dehydration, bacterial pneumonia, urinary tract infections, and gastroenteritis) the inpatient hospitalization rate for children enrolled in Medicaid (4.4 per 1,000 members) was higher than the SCHIP rate (2.8 per 1,000 members) and more than double the rate for NH CHIS commercial (1.7 per 1,000 members). Detailed rates for the inpatient ACS conditions are provided in Table 21. The overall ACS rate for Medicaid was 1.5 times the SCHIP rate and 2.4 times the NH CHIS commercial rate; the rate for hospitalization for bacterial pneumonia in Medicaid was 2.5 times the SCHIP or NH CHIS commercial rate.

**Table 21. Ambulatory Care Sensitive (ACS) Condition Inpatient Hospitalization Rates per 1,000 Members by Plan, SFY2007**

ACS Condition	Medicaid	SCHIP	NH CHIS Commercial
Total	4.4 (295)	2.8 (20)	1.7 (223)
Asthma	1.4 (91)	1.2 (9)	0.4 (50)
Dehydration	0.9 (60)	0.4 (3)	0.3 (45)
Bacterial Pneumonia	1.5 (99)	0.7 (5)	0.6 (79)
Urinary Tract Infection	0.5 (36)	0.3 (2)	0.2 (32)
Gastroenteritis	0.1 (9)	0.1 (1)	0.1 (17)

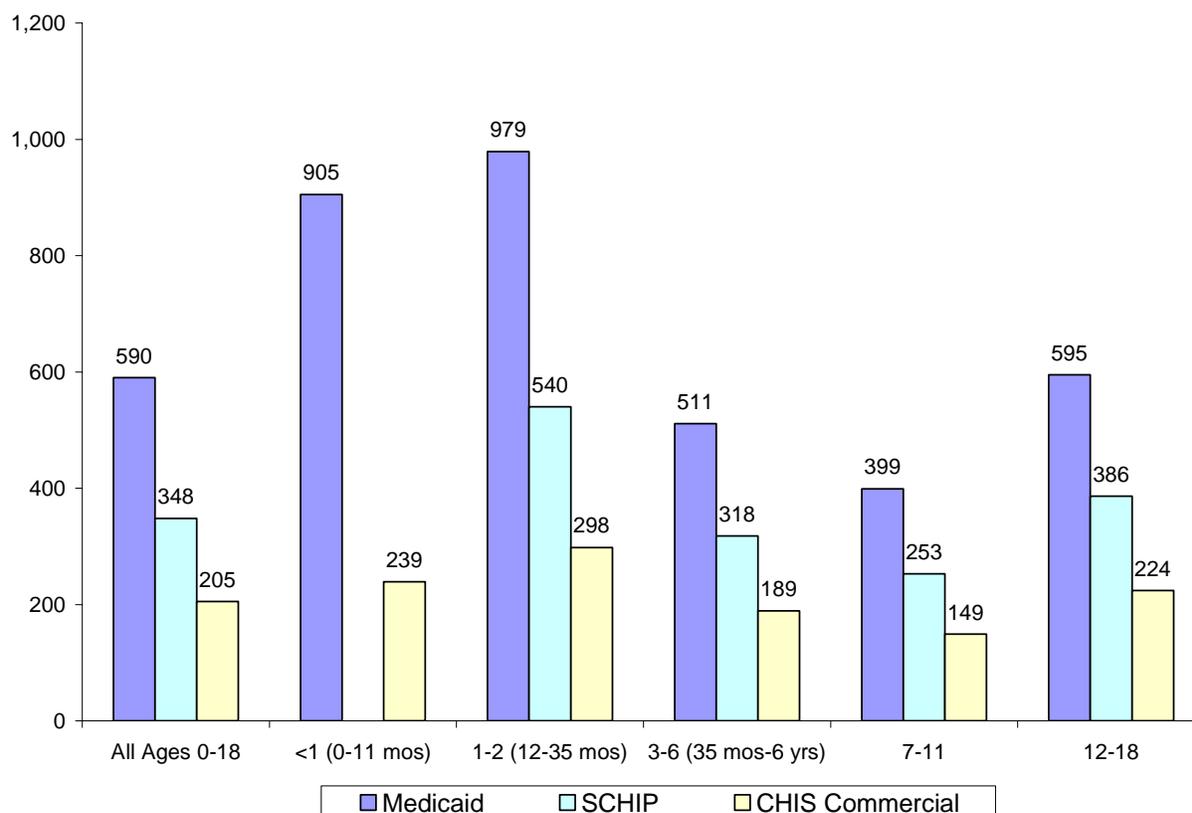
Because ACS hospitalizations may be preventable or avoidable, the payment (plan payments and member responsibility) was determined from the claims data. The 295 Medicaid hospitalizations were \$552,623 (average \$1,873), the 20 SCHIP hospitalizations were \$57,457 (average \$2,873), and the 223 NH CHIS commercial hospitalizations were \$1,351,861 (average \$6,062). The lower average payment for Medicaid per ACS hospitalization is a reflection of the much lower payment rates of the Medicaid program.

### Emergency Department and Office/Clinic Visits

Hospital outpatient emergency department visit rates and outpatient office/clinic visit rates are summarized in Figures 11 and 12 and Table 22. Rates of outpatient emergency department visits and office/clinic visits declined with the age of child through age 7–11 years and then increased again for children age 12–18 years; this was true for Medicaid, SCHIP, and NH CHIS commercial plan types.

Children enrolled in Medicaid incurred 39,292 outpatient emergency department visits. The rate for outpatient emergency department visits for children enrolled in Medicaid (590 per 1,000 members) was almost three times the rate for children enrolled in NH CHIS commercial (205 per 1,000 members); children enrolled in SCHIP also had a higher rate (348 per 1,000 members) compared to CHIS commercial. Rates of office/clinic visits were higher in Medicaid (3,797 per 1,000) compared to SCHIP (3,380 per 1,000) and NH CHIS commercial (2,864 per 1,000). These findings are consistent with SFY2006 results.

**Figure 11. Outpatient Emergency Department Visit Rates per 1,000 Members by Age, SFY2007**



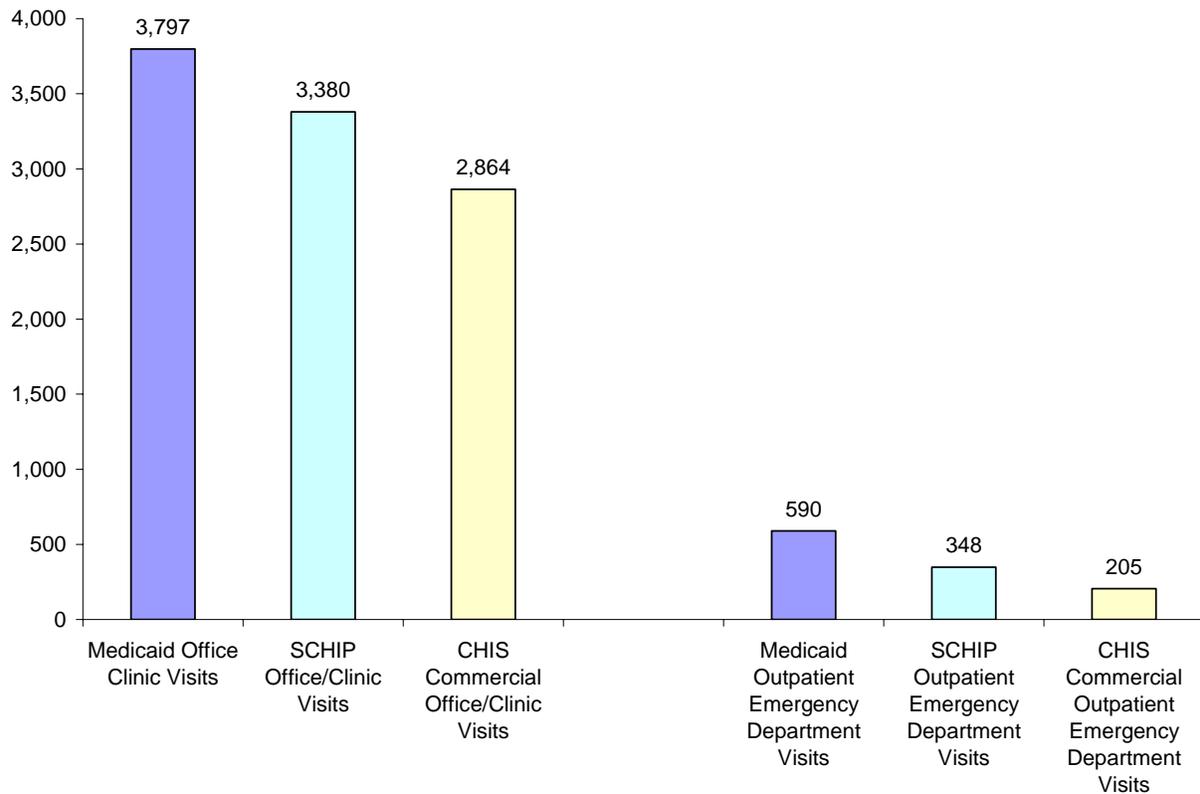
The ratio of outpatient emergency department visits to office/clinic visits may be an indicator of patterns of care. A high ratio of outpatient emergency department visits to office/clinic visits may indicate that the usual source of care for some children is more likely to be the hospital emergency department instead of a health care provider's office. For SFY2007, the ratio of outpatient emergency department visits to office/clinic visits was highest for children in Medicaid (0.16) followed by SCHIP (0.10) and NH CHIS commercial (0.07). These results are identical to SFY2006 results.

**Table 22. Outpatient Emergency Department and Office/Clinic Visit Rates per 1,000 Members by Age and Plan, SFY 2006**

Age Group	Medicaid	SCHIP	NH CHIS Commercial
<b>Outpatient Emergency Department Visits</b>			
Total	590 (39,292)	348 (2,524)	205 (26,531)
<1 (0–11 mos)	905 (3,259)	NA	239 (661)
1–2 (12–35 mos)	979 (8,172)	540 (351)	298 (3,010)
3–6 (36 mos–6 yrs)	511 (7,663)	318 (494)	189 (4,268)
7–11	399 (6,866)	253 (514)	149 (4,869)
12–18	595 (13,332)	386 (1,165)	224 (13,723)
<b>Office/Clinic Visits</b>			
Total	3,797 (252,727)	3,380 (24,520)	2,864 (370,872)
<1 (0–11 mos)	10,056 (36,219)	NA	9,212 (25,425)
1–2 (12–35 mos)	6,367 (53,143)	6,020 (3,911)	5,779 (58,373)
3–6 (36 mos–6 yrs)	3,250 (48,782)	3,504 (5,444)	2,940 (66,311)
7–11	2,744 (47,230)	2,918 (5,932)	2,235 (73,216)
12–18	3,007 (67,353)	3,059 (9,233)	2,407 (147,547)

NA: SCHIP does not cover children under the age of one. Emergency department visits resulting in inpatient hospitalization are excluded.

**Figure 12. Office-Clinic and Outpatient Emergency Department Visit Rates per 1,000 Members, SFY2007**



In a prior study, the NH CHIS project identified emergency department visit diagnostic groups (e.g., upper respiratory infections, ear infections, bronchitis) for which an alternative setting of care would have been more appropriate.<sup>35</sup>

The resulting outpatient emergency department visit rates for these conditions are summarized in Table 23. Children enrolled in Medicaid incurred 16,149 of these visits during SFY2007. For conditions for which an alternative setting of care could have been more appropriate (e.g., upper respiratory infection, ear infection, bronchitis), the outpatient emergency department use rate for children enrolled in NH Medicaid (243 per 1,000 members) was higher than SCHIP (122 per 1,000 members) or NH CHIS commercial (61 per 1,000 members). Outpatient emergency department use rates for several of these conditions were 5 or more times greater in children enrolled in Medicaid compared to children enrolled in NH CHIS commercial rates; SCHIP rates for several of these conditions were 2 or more times greater than NH CHIS commercial. SFY2006 and SFY2007 rates were similar and the same variation between plan types was found in the SFY2006 reporting.

For these selected conditions, the ratio of emergency department to office/clinic visits for Medicaid (0.19) and SCHIP (0.10) was higher than NH CHIS commercial (0.06); this pattern was found for virtually every specific diagnostic category. These ratios are identical to the SFY2006 report. This indicates that children enrolled in NH Medicaid, and to a lesser extent SCHIP, were more likely than children enrolled in NH CHIS commercial to receive treatment in the hospital emergency department for conditions that could have been treated in a physician's office or clinic.

**Table 23. Outpatient Emergency Department Visit Rates per 1,000 Members for Selected Conditions, SFY2007**

<b>Selected Diagnostic Group</b>	<b>Medicaid</b>	<b>SCHIP</b>	<b>NH CHIS Commercial</b>
<b>Total Selected Conditions</b>	<b>243 (16,149)</b>	<b>122 (884)</b>	<b>61 (7,907)</b>
Asthma	11 (730)	7 (49)	4 (470)
Dehydration	3 (167)	2 (18)	1 (156)
Bacterial Pneumonia	9 (581)	4 (32)	2 (310)
Urinary Tract Infection	7 (462)	4 (28)	3 (360)
Gastroenteritis	9 (578)	4 (29)	2 (265)
Sore throat (Strep)	8 (523)	4 (26)	2 (234)
Viral Infection (unspecified)	15 (984)	7 (51)	3 (365)
Anxiety (unspecified or generalized)	1 (85)	1 (8)	1 (65)
Conjunctivitis (acute or unspecified)	8 (543)	2 (13)	1 (155)
External and middle ear infections (acute or unspecified)	55 (3,634)	27 (193)	11 (1,420)
Upper respiratory infections (acute or unspecified)	55 (3,640)	22 (161)	11 (1,453)
Bronchitis (acute or unspecified) or cough	19 (1,256)	9 (64)	4 (504)
Dermatitis and rash	14 (942)	5 (34)	3 (373)
Joint pain	4 (250)	3 (25)	2 (222)
Lower and unspecified back pain	2 (128)	0 (2)	1 (86)
Muscle and soft tissue limb pain	3 (172)	2 (13)	1 (132)
Fatigue	1 (42)	1 (5)	0 (34)
Headache	4 (285)	3 (21)	2 (235)
Abdominal pain	17 (1,147)	15 (112)	8 (1,068)

Note: Emergency department visits resulting in inpatient hospitalization were excluded.

Because an alternative setting of care (office-clinic) to the emergency department is more appropriate for these selected conditions, the payment (plan payments and member responsibility) was determined from the claims data and summarized in Table 24.

**Table 24. Outpatient Emergency Department and Office-Clinic Visit Payments for Selected Conditions, SFY2007**

Measure	Medicaid	SCHIP	NH CHIS Commercial
<b>Outpatient Emergency Department</b>			
Total Outpatient ED Visits	16,149	884	7,907
Total Payments	\$1,517,163	\$203,076	\$2,292,594
Average Payment per Visit	\$94	\$230	\$290
<b>Office-Clinic</b>			
Total Office-Clinic Visits	83,502	9,225	129,139
Total Payments	\$4,777,806	\$764,715	\$11,418,038
Average Payment per Visit	\$57	\$83	\$88

Note: Emergency department visits resulting in inpatient hospitalization were excluded. Payments include plan payments, prepaid amounts on capitated claims, and member responsibilities (coinsurance, deductible, co-payments). All payments were based on the information on submitted administrative claims.

Children enrolled in Medicaid incurred \$1.5 million for outpatient emergency department visits for these selected conditions. The lower average payment for Medicaid per visit is a reflection of the significantly lower payment rates of the Medicaid program. For Medicaid, SCHIP, and NH CHIS commercial, the average payment per visit for an outpatient emergency department visit was significantly higher than an office-clinic visit for these conditions. For Medicaid, the average payment per outpatient emergency department visit (\$94) was higher than an office-clinic visit (\$57) for these conditions.

#### *Payments per Member per Month*

Total payment rates per member per month (PMPM) by age group and plan type were evaluated. These payments include both plan paid, prepaid amounts on capitated claims, and member responsibility (e.g., coinsurance, deductible, and co-payments).<sup>\*</sup> For children included in this study, NH Medicaid incurred \$193.3 million in payments, SCHIP incurred \$10.4 million in plan payments and \$731,000 in member responsibility, and NH CHIS commercial incurred \$166.6 million in plan payments and \$19.2 million in member responsibility.<sup>\*\*</sup>

<sup>\*</sup> Payments are based on the information on submitted administrative claims. Children enrolled in Medicaid identified as severely disabled, mentally disabled, or physically disabled by eligibility classification were excluded entirely from this study. Exclusion of this special population increased the validity of comparisons to SCHIP and NH CHIS commercial. There were approximately 1,365 children in these disabled eligibility classifications covered by Medicaid excluded from this study. The average monthly cost for these disabled children is approximately 11 times higher than the low income children enrolled in Medicaid included in this report. Children in disabled eligibility categories account for less than 2% of children enrolled in Medicaid and over 18% of total Medicaid payments for children.

<sup>\*\*</sup> The payments reported are based on administrative claims data. Retroactive payment settlements with providers not reflected in claims data were not available for this report. SCHIP and CHIS commercial include some prepaid amounts on capitated claims. When the health plan data is submitted to the CHIS the health plans were told to populate the prepaid dollar amount field with what the plan would have been liable for if the rendered service was paid under a fee for service schedule instead of a capitated service. Thus the amount usually represents the plan allowed amount and does not have member liability payments taken out of the value. This amount does not represent what was actually paid to the provider as a capitation payment for the members covered under the policy, although in total the prepaid dollar amounts should represent a total that is

Medicaid payments include services that are typically not covered under private health insurance or SCHIP. A detailed NH CHIS study of the factors contributing to higher Medicaid payment PMPM rates was completed during 2008.<sup>36</sup> That study identified additional services that are typically not covered by private health insurance or SCHIP: school-based special education services, services for the developmentally disabled, and services provided through NH Division of Children, Youth, and Families (DCYF). Payments to private non-medical institutions (PNMI) and payments for dental services have also been excluded in previous NH CHIS SFY2007 reporting on children. In total, these services represent \$71.5 million (37%) of the \$193.3 million Medicaid payments for children and are excluded in the payment PMPM comparison reported in Table 25.

Excluding special services specific to Medicaid and newborns and infants (age 0–11 months), the comparative payment rates for children per member per month (PMPM) were slightly higher in Medicaid (\$138 PMPM) compared with SCHIP (\$128 PMPM) or NH CHIS commercial (\$113 PMPM). The payment rate PMPM for Medicaid children was lower than SCHIP or CHIS commercial for younger children age 1-2 and 3-6, but higher for older children age 7-11 and age 12-18. The NH CHIS special study on payment PMPM rates indicated that the higher rate for older children was driven by mental health disorders that are more prevalent in older children.

**Table 25. Payment Rates per Member per Month (PMPM) by Age and Plan, SFY2007**

*Excludes payments for private non-medical institutions, dental services, school-based special education services, services for the developmentally disabled, and services provided through NH DCYF. The payment PMPM rates in this table cannot be compared with previous SFY2006 NH CHIS reporting because of the additional exclusion made*

Age Group	Medicaid*	SCHIP	NH CHIS Commercial
Total	\$153	NA	\$120
Total excluding age 0–11 mos	\$138	\$128	\$113
<1 (0–11 mos)	\$415	NA	\$398
1–2 (12–35 mos)	\$118	\$184	\$147
3–6 (36 mos–6 yrs)	\$87	\$96	\$93
7–11	\$139	\$106	\$83
12–18	\$177	\$147	\$132
12–18, excluding pregnancy	\$171	\$143	\$130

NA: SCHIP does not cover children under the age of one.

Note: See footnotes on page 37

Payment rates for Medicaid population reflect higher utilization in the Medicaid population, higher prevalence of disease in the Medicaid population, and the Early Periodic Screening, Diagnosis, and Treatment (EPSDT) program requirements under federal law (Title XIX of the Social Security Act) that can override state Medicaid program benefit limitations.

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slightly higher than the total of the capitated payments plus any member payments. Prepaid dollar amounts account for 7% of SCHIP and 1% of CHIS commercial payments.

The NH CHIS study of payment rates also indicated that poverty level within Medicaid was associated with payments PMPM. Children in the lowest percent of federal poverty level had the highest payment PMPM rates.

A three-year trend analysis of payments PMPM will be incorporated in the SFY2008 NH CHIS report on children's health insurance programs in New Hampshire.

To summarize the results from the utilization section of this report, children enrolled in NH Medicaid used inpatient services and outpatient emergency department services at more than twice the rate of children enrolled in NH CHIS commercial. Office-clinic visit rates were also higher than SCHIP or CHIS commercial in the Medicaid population. Children enrolled in SCHIP utilized these medical services at a higher rate than NH CHIS commercial but a lower rate than Medicaid. Overall, children enrolled in Medicaid incur monthly claim expenses that higher than children enrolled in NH CHIS commercial or SCHIP because of services that are typically not covered by private insurance or SCHIP. Within Medicaid, poverty level and mental health disorders were significant factors contributing to Medicaid PMPM payment rates.



## DISCUSSION AND NEXT STEPS

This study evaluated a wide variety of health care measures (enrollment and disenrollment, access to primary care, well-child visits, effectiveness of care management, prevalence and utilization for mental health disorders, and utilization and payment) for New Hampshire children with Medicaid, SCHIP, and CHIS commercial insurance during SFY2007 using administrative eligibility and claims data. The study updates the SFY2006 report on New Hampshire children's health insurance incorporating New Hampshire Medicaid data and the Comprehensive Health Care Information System (NH CHIS) commercial health care claims database. HEDIS quality and access to care measures were reported based on the administrative claims data submitted to the NH CHIS.

Studies using these methods to directly compare children enrolled in Medicaid or SCHIP with children enrolled in commercial plans appear to be lacking and NH CHIS has produced one of the first studies comparing these three plan types based on administrative claims data.

A new and broader definition of child health was recently proposed in an Institute of Medicine (IOM) report:

*Children's health should be defined as the extent to which individual children or groups of children are able or enabled to (a) develop and realize their potential, (b) satisfy their needs, and (c) develop the capabilities to allow them to interact successfully with their biological, physical, and social environments.<sup>37</sup>*

Income level and poverty status are primary distinguishing factors determining enrollment in Medicaid, SCHIP, or commercial plans. A recent study from the National Health Interview Survey (NHIS) data indicated that low-income children are more likely than other children to have virtually every measured chronic or acute condition and are more likely to be limited by these conditions, with mental health conditions particularly common and limiting.<sup>38</sup> The results from the NH CHIS report data confirm this relationship in New Hampshire. The prevalence of asthma and mental health disorders in children enrolled in Medicaid was double the rate in NH CHIS commercial; children in SCHIP had prevalence rates of these disorders closer to the Medicaid population than the NH CHIS commercial population. Evaluation of the relative cost (payment PMPM) within Medicaid children indicated that children in households with adjusted incomes lower than the federal poverty level had higher payments compared with Medicaid children in households above the federal poverty level but still qualifying for Medicaid.

A recently published study, using national Current Population Survey (CPS) data, found that one-third of all uninsured children in 2006 had been enrolled in Medicaid or SCHIP the previous year. Among those uninsured but eligible for public coverage in 2006, at least 42% had been enrolled in Medicaid or SCHIP the previous year; both of these measures of disenrollment have increased since 2000.<sup>39</sup> Although no data is available through the NH CHIS to evaluate children without insurance, the results of the NH CHIS enrollment data

also indicate that lack of retention in a single health insurance plan could be a potential problem for children in New Hampshire with regard to continuity of care.

The results from the NH CHIS enrollment data also suggest that children in New Hampshire have potential problems with continuity of insurance coverage. At least one in four children enrolled at the start of the study in Medicaid or NH CHIS commercial disenrolled from the plan during the year. Twenty-two percent of the children who disenrolled from Medicaid re-enrolled later in the year. Half of the children enrolled in SCHIP at the start of the study disenrolled during the year. Discontinuity in plan enrollment may have had an impact on access to care, well-child visits or use of preventive services, and utilization of other services for children.

The study results indicate that not all children in New Hampshire had well-child visits consistent with guidelines for preventive care. Rates of well-child visits were higher in SCHIP and NH CHIS commercial compared to Medicaid.

Rates of access to primary care were consistently higher in children covered under SCHIP compared to Medicaid or NH CHIS commercial. New Hampshire children enrolled in SCHIP accessed a primary care practitioner in a shorter time after enrollment compared to children in Medicaid or NH CHIS commercial. This supports the finding of other previous studies that indicate that children enrolling in SCHIP may have prior unmet health care needs.<sup>40</sup>

HEDIS rates of appropriate medication management for asthma, pharyngitis, and upper respiratory infection were higher for NH Medicaid, SCHIP, and NH commercial compared to NCQA HEDIS national averages. However, rates indicated that compliance with recommended effective care was not reported for a significant percentage of children. Some children with persistent asthma were not using recommended long-term controller medications. Two other findings showed that some children were receiving antibiotics without a strep test, and that some children were receiving antibiotics for upper respiratory infections when it is not recommended therapy.

This study also tracked a variety of utilization measures. Rates of use were highest for children enrolled in Medicaid, lower for SCHIP, and lowest for NH CHIS commercial. Rates for inpatient stays for ambulatory care sensitive conditions were 57% higher for children enrolled in Medicaid compared to SCHIP and 258% higher compared to the rate for NH CHIS commercial. The outpatient emergency department use rates for conditions for which an alternative setting is more appropriate (e.g., upper respiratory infection, ear infection, bronchitis), indicated that children enrolled in Medicaid and, to a lesser extent, SCHIP, were more likely to use the emergency department for care compared to children enrolled in NH CHIS commercial. This suggests that a higher percentage of children enrolled in Medicaid might be using the emergency room as a “usual” source of care. An additional NH CHIS study of frequent ED user is available that provides more information.

The impact of higher chronic disease rates and higher inpatient and outpatient emergency department utilization rates is reflected in part in plan payments; Medicaid payments per child covered (when adjusted for services not included in the other plans) were lower for younger children and higher for older children compared with SCHIP and NH CHIS commercial. NH Medicaid may have lower reimbursement rates per service compared with

commercial plans. This report did not consider or report on the differences in the insurance plan delivery model and benefit structures; NH Medicaid has no co-payments and covers a greater array of services compared to NH CHIS commercial plans. These differences have been noted in other studies.<sup>41</sup> Most children in NH CHIS commercial, and all children in SCHIP, were enrolled in managed care or preferred provider plans while NH Medicaid was fee-for-service. A more detailed NH CHIS study SFY2007 payments indicates that children at the lowest poverty levels within Medicaid are a significant driver of difference payment differences.

This NH CHIS study does support the fact that children enrolled in SCHIP, at least in New Hampshire, had a higher prevalence of chronic disease than children enrolled in commercial insurance and utilize services at a greater rate than children in commercial insurance. However, at least in New Hampshire, children enrolled in SCHIP had rates of access to primary care practitioners and rates of well-child visits that were slightly higher than children enrolled in commercial plans. These findings may indicate that children enrolled in SCHIP have unmet needs for preventive and other health care that are met soon after enrollment in SCHIP. Due to the higher prevalence of chronic disease and higher utilization rates, average payments per month for children in NH SCHIP were slightly higher than NH children with commercial insurance.\* This suggests that, at least in New Hampshire, the SCHIP program has met needs of children from lower-income households that do not qualify for Medicaid with a payment per child covered that is within the range of children covered through commercial insurance.

Trends in rates between SFY2006 and SFY2007 were evaluated. For most measures there were no statistically significant changes in rates.

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## Next Steps

The primary research focus of this study was to update health care measurements for children in New Hampshire. Children enrolled in Medicaid, SCHIP, and NH CHIS commercial insurance were compared for SFY2007, which updated a SFY2006 report. In addition, the findings of this report suggest a number of additional projects.

Over half of the children enrolled in SCHIP at the start of the study disenrolled during the year. This discontinuity of coverage may have an impact on access to primary care and well-child preventive visits for these children. Disenrollment from SCHIP resulting from income changes may be a problem and a 12-month continuous coverage or other renewal options for children who no longer meet income guidelines could result in improved continuity of care. Further studies of enrollment, disenrollment, and transitions between plan types are being developed to examine this issue.

The results of this study suggest that New Hampshire children had higher rates of access to primary care practitioners and well-child visits compared to national HEDIS benchmarks. Despite this positive finding, the results also indicate that some New Hampshire children did not receive these services. Children enrolled in Medicaid had higher rates of use of the emergency department for conditions treatable in a primary care physician's of-

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\* New Hampshire Healthy Kids Corporation provider partnerships influence negotiation of more favorable payment rates. Also, the SCHIP rate as reported may be slightly higher than actual due to higher percentage of claims that CHIS commercial processed under a capitated arrangement. See note on page 37.

fice. These results suggest room for improvement. A review of primary care case management or other program models may be worthwhile. Intervention or education for members with excessive use of the emergency department could also be beneficial. While difficult to study with just claims data, a study to examine ED use as it relates to availability of office services during the weekend and at night would be valuable.

Compared to younger children, adolescents had lower rates of well-child visits but high rates of inpatient use, outpatient emergency department use, and payments per member month. This was true for NH Medicaid, SCHIP, and NH CHIS commercial. A more detailed evaluation of access and utilization by the adolescent population for NH CHIS is underway.

The prevalence of mental health disorders was high in NH children enrolled in Medicaid compared to children in SCHIP and commercial coverage. This report provided a first look at psychotropic medication use among children with a mental health disorder. Children on Medicaid with mental health disorders averaged more psychotropic medication days than SCHIP or CHIS commercial children with a mental health disorder. Evaluating the impact of multiple coexisting mental health disorders in children enrolled in Medicaid may be informative as to the causes for the higher medication use rates.

Children enrolled in Medicaid incurred higher payments per member than children enrolled in SCHIP or NH CHIS commercial. A detailed study of the factors contributing to these differences for SFY2007 has been published by NH CHIS. Evaluation of the relative cost (payment PMPM) within children on Medicaid indicated that children in households with incomes below the federal poverty level had higher payments compared with Medicaid children in households above the federal poverty level but still qualifying for Medicaid. Insurance plan delivery model and benefit structure may also be factors. Medicaid typically reimburses less per service than NH CHIS commercial plans but it is also a fee-for-service plan without co-payments that covers services that have little or no benefit coverage in commercial plans.

One of the populations covered by Medicaid and reported with other children in this study is the foster care population. A NH CHIS study to examine children in foster care in comparison to non-foster care children is currently underway.

Previous studies from the NH CHIS project have examined geographic variation in utilization and have found that utilization is not homogeneous across regions of the state.<sup>42</sup> A study of geographic variation in utilization rates for children is currently underway.

A significant number of children did not have well-child visits based on the administrative claims data. A study evaluating the factors associated with lack of well-child visits is in the planning stages.

Rates of inpatient use for ambulatory care sensitive conditions are much higher in NH Medicaid than SCHIP, and SCHIP was higher than NH CHIS commercial. Additionally rates of receiving treatment in the hospital emergency department for conditions that could have been treated in a physician's office or clinic for NH Medicaid, and to a lesser extent SCHIP, were higher than NH CHIS commercial. A study comparing the primary care use

of children with high rates of ED use or inpatient stays for ambulatory care sensitive conditions is currently in planning phase.



# APPENDICES



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## Appendix 1: Children's Health Insurance Programs in New Hampshire—Study Methods

This study was based on administrative eligibility and claims data from New Hampshire Medicaid and the NH CHIS commercial databases for SFY2007 (July 2006–June 2007) and FY2006 (July 2005–June 2006) based on date of service. The study focused on SFY2007 results; FY2006 data were used for selected HEDIS measures that required two years of data and for evaluation of trends.

**1. Data acquisition and preparation.** Medicaid, SCHIP, and NH CHIS commercial data were used in this study. Complete Medicaid, SCHIP, and CHIS commercial data was available for the SFY under study. The new NH CHIS commercial plan data collection began January 2004; therefore, the 6-month period July 2004–December 2004 was not available to evaluate the SFY2006–SFY2007 trend for a few HEDIS measures: asthma medication management and primary care practitioner access for children 7-11 and 12-18 that require two years of data. The MHIC worked to crosswalk children who had both Medicaid and SCHIP during the period. Upon review, it was determined that children with both NH CHIS commercial and Medicaid/SCHIP during the same year could not be cross-walked. A future study is planned to evaluate this issue further.

**2. Data limitations and exclusions.** The NH CHIS commercial population contains information on those residents whose claims are included in the NH Comprehensive Health Care Information System database, that generally includes only members whose policies were purchased in New Hampshire. Areas close to the borders of New Hampshire may be less well represented than areas in the interior.

Federal poverty level data was available for children enrolled in Medicaid and SCHIP but was not available in the NH CHIS commercial data.

Severely disabled (AID 2B,2C,2D,2K), physical disabled (AID 30,31,32,70,71,72,83,84) and mentally disabled (AID 50,51,52,82,83) eligibility groups were excluded from all reports in this study. This group of approximately 1,365 children represents less than 2% of all children covered by Medicaid. They were excluded because their access to preventive services, utilization of services, and payment profiles would be dramatically different from other children enrolled in Medicaid, SCHIP, or NH CHIS commercial plans. Therefore, by excluding these children, the potential for bias in the comparison of rates by plan type was reduced.

Prior experience indicates that commercial Indemnity or Third Party Administrator (TPA) plans often have very different benefit structures and claims processing methods compared to HMO, Point-of-Service, or Preferred Provider Plans. Higher deductibles may lead to claims not being submitted by the subscriber. There is some evidence that some Indemnity or TPA processing systems allow claims to be processed without standard CPT or other coding required for HEDIS measures used in this study. Prior studies by the MHIC have revealed substantially lower rates of preventive service and other measures for Indemnity/TPA plan members. Because of potential for negative bias (reduced rates) in the NH CHIS commercial insurance estimates, children enrolled in Indemnity and TPA plans (12% of NH CHIS commercial children) were excluded from the claims-based HEDIS measures

reported. Children enrolled in NH CHIS commercial Indemnity and TPA plans were included in all non-HEDIS sections of the reporting. A second value to excluding Indemnity or TPA plans from this study is that NCQA HEDIS measures reported nationally do not include Indemnity or TPA plan data.

**3. Member Assignment.** Because members may change age, location of residence, eligibility grouping, or poverty level status during the year, each member was assigned to one and only one category for the fiscal year. Their eligibility group, Health Analysis Area, and poverty level on the last day of the last month enrolled and their age on the first day of the last month enrolled were used. This methodology is consistent with other NH CHIS reporting.

**4. Age groups and gender.** Consistent with other NH CHIS reporting a child was defined by age 0–18 years. The cutoff at age 18 is requested by New Hampshire DHHS and corresponds to the definition of child for Medicaid eligibility purposes. Age groups used for reporting were <1 (0-11 months), 1-2 (12-35 months), 3-6 (36 months-6 years), 7-11 years, and 12-18 years. For some HEDIS measures, age groups were modified to correspond to the NCQA HEDIS definitions. Gender was not evaluated in this project.

**5. NH Medicaid Health Service Areas.** Aggregation of zip codes based on New Hampshire Medicaid Health Service Area (HSA) for NH Medicaid enrollees was utilized (Appendix D). Health Service Areas are relevant to how health care is delivered in NH compared to counties.

**6. Denominator for Population-Based Rates.** This study was based on rates of use per member population covered. Not all members are covered for a full year. Therefore, a person covered for a full 12 months might be twice as likely to have preventive and other medical services during the year compared with a person covered for only 6 months. Standard methods to adjust denominators for differences in exposure time were used. Thus, average members (cumulative member months divided by 12) was utilized as denominator for rates in this study. Other measures in this study are based on HEDIS methods that include a subset of children continuously covered during the period; it is not necessary to use member month person-time as a denominator for these measures.

**7. Childrens' and Adolescents' Access to Primary Care Practitioners HEDIS measure.** The HEDIS access to primary care practitioners is not a measure of preventive service; the visits reported include both visits for preventive service and visits for medical illness and other problems. The coding used to identify the percent of members who had a visit with a primary care practitioner was modified from exact HEDIS specifications after review of claims data to ensure that primary care visits in hospital-clinic and rural health clinic settings were included.

CPT codes 99201,99202,99203,99204,99205,99211,99212,99213,99214,99215,99241,99242,99243,99244,99245,99341,99342,99343,99344,99345,99346,99347,99348,99349,99350,99381,99382,99383,99384,99385,99391,99392,99393,99394,99395,99401,99402,99403,99404,99411,99412,99420,99429,99499,99432  
or any diagnosis code V202,V700,V703,V705,V706,V708,V709 or CPT/HCPC codes T1015,99354,99355,99432  
or UB revenue codes 0510 - 0529 or 0770,0771,0779,0983  
and MHIC provider specialty codes:  
0101 Hospital / General  
0105 Hospital / Ancillary

- 0201 Hospital / Outpatient
- 1002 Misc Facility / Urgent Care Center
- 1009 Misc Facility / Misc Facility Use
- 1101 Clinic Facilities / Services
- 1201 Rural Health Centers
- 3001 Primary Care - Family / General Practice
- 3101 Primary Care - Internal Medicine
- 3201 Primary Care - Pediatrics
- 5201 Licensed Nurses (includes NP)
- 4601 Physicians Assistants

Excludes inpatient hospital claims and emergency department services claims

Requires 11+ Months Enrollment, and Enrolled in the final month of the measurement year (SFY2007)

**8. Well-Child Visits in the First 15 Months of Life HEDIS measure.** The HEDIS well-child visit measures specific primary care practitioner visits identified as well-care visits. Unlike the access to primary care practitioner measure, that includes both visits for preventive services and for medical illness, this measure is designed to more strictly identify preventive care visits. CPT and diagnosis codes used are identical to HEDIS specifications and the CPT codes are age group specific. For this study provider specialty codes include primary care well-care visits that might occur in the hospital-clinic and rural health clinic settings.

CPT 99381,99382,99391,99392,99432 (well-child visit during first 15 months of life)

CPT 99382,99383,99392,99393 (well-child visit age 25 months to 6 years)

CPT 99383,99384,99385,99393,99394,99395 (adolescent well care visits)

or any diagnosis code V202,V700,V703,V705,V706,V708,V709

and MHIC provider specialty codes:

- 0101 Hospital / General
- 0105 Hospital / Ancillary
- 0201 Hospital / Outpatient
- 1002 Misc Facility / Urgent Care Center
- 1009 Misc Facility / Misc Facility Use
- 1101 Clinic Facilities / Services
- 1201 Rural Health Centers
- 3001 Primary Care - Family / General Practice
- 3101 Primary Care - Internal Medicine
- 3201 Primary Care - Pediatrics
- 5201 Licensed Nurses (includes NP)
- 4601 Physicians Assistants

3906 Obstetrics / Gynecology (HEDIS specifications include OB/GYN only for the adolescent well-child measure)

Excludes inpatient hospital claims and emergency department services claims

Requires 13+ months enrollment from Birth+31 days to Birth+455 days (well-child visit during first 15 months of life)

Requires 11+ Months Enrollment, and enrolled in the final month of the measurement year (SFY2007) for other age groups

**9. Effectiveness of Care Measures.** Three NCQA HEDIS effectiveness of care measures were evaluated: use of appropriate controller medications for asthma, appropriate antibiotic use (not dispensed) for upper respiratory infections, and appropriate strep testing for children with pharyngitis and antibiotic use. NCQA HEDIS specifications were followed for this reporting. The details of these specifications are complex and beyond the scope of inclusion in this appendix; readers are referred to HEDIS 2007, Technical Specifications, Volume 2. National Committee for Quality Assurance. 2006. [www.ncqa.org](http://www.ncqa.org).

**10. Emergency Department Visit Definition.** This study focused on outpatient hospital emergency department visits. Emergency department visits were selected based on UB revenue codes 0450-0459 or CPT codes 99281-99285. Visits resulting in inpatient hospitalization were excluded by using Medicaid category of service codes 1,3,103. This definition includes revenue code 0456 hospital urgent care center visits that are sometimes excluded from other studies.

**11. Office/Clinic Visit Definition.** Office or clinic visits were identified were selected based on CPT codes.

99201, 99202, 99203, 99204, 99205, 99211, 99212, 99213, 99214, 99215, 99354, 99355, 99381, 99382, 99383, 99384, 99385, 99386, 99387, 99391, 99392, 99393, 99394, 99395, 99396, 99397, 99401, 99402, 99403, 99404, 99411, 99412, 99420, 99429, 99432, T1015, 99241, 99242, 99243, 99244, 99245 or UB revenue codes 510-519, 520-529, or 983.

This definition was based on codes found in NCQA HEDIS specifications plus additional codes for NH rural health centers, federally qualified health centers, and hospital facility based primary care clinics.

**12. Mental Health Disorder ICD-9-CM Diagnosis Coding.** The diagnostic groupings used to report mental health disorders in children in this report is based on definitions used in other NH CHIS mental health disorder reports and were derived from a report prepared for the Substance Abuse and Mental Health Services Administration. (Defining Mental Health and/or Substance Abuse (MH/SA) Claimants. Report prepared for the Substance Abuse and Mental Health Services Administration. October, 2003. RTI International and The Medstat Group. [http://www.nri-inc.org/OSA/Download/Appendix%20\\_a\\_Defining\\_MH-SA\\_Claimants.pdf](http://www.nri-inc.org/OSA/Download/Appendix%20_a_Defining_MH-SA_Claimants.pdf))

#### **Serious Mental Health Disorder**

- 01 SCHIZOPHRENIC DISORDERS 295
- 02 MAJOR DEPRESSION 296.2, 296.3
- 03 BIPOLAR & OTHER AFFECTIVE PSYCHOSES
  - Manic Disorders 296.0, 296.1
  - Bipolar Affective Disorders 296.4-296.7
  - Other and unspecified manic-depressive disorders 296.8
  - Other and unspecified affective psychoses 296.9
- 04 OTHER PSYCHOSES
  - Transient organic psychotic conditions 293
  - Other organic psychotic conditions, chronic 294
  - Paranoid states or delusional disorders 297
  - Other non-organic psychoses 298
  - Psychoses with origin specific to childhood 299

#### **Other Mental Health Disorders**

- 05 STRESS & ADJUSTMENT
  - Acute reaction to stress 308
  - Adjustment reaction 309
- 06 PERSONALITY DISORDER 301
- 07 DISTURBANCE OF CONDUCT 312
- 08 DISTURBANCE OF EMOTIONS 313
- 09 ADHD Hyperkinetic 314
- 10 NEUROTIC DISORDERS 300
- 11 DEPRESSION NEC 311
- 12 OTHER MENTAL HEALTH DISORDERS
  - Sexual deviations and disorders 302
  - Physiological malfunction arising from mental factors 306

Special symptoms or syndromes, not elsewhere specified 307  
Specific non-psychotic mental health disorders due to organic brain damaged 310  
Psychotic factors associated with diseases specified elsewhere 316

### **13. Psychotropic Medication Use Classification.**

Administrative pharmacy claims contain the National Drug Code (NDC), an 11-digit code that identifies the manufacturer, product, strength, dosage form, formulation, and package sizes for medications. There are approximately 200,000 different NDC codes.

Maine Health Information Center uses REDBOOK™ to aggregate NDC codes into meaningful therapeutic categories to develop reporting and analysis. The following categories derived from REDBOOK™ were used for the study of psychotropic medications in this study.

- 2410 CNS-Antidepressants (e.g. Zoloft / sertraline)
- 2610 CNS-Antipsychotics-Tranquilizers (e.g. Risperdol / risperidone)
- 2810 CNS-Stimulants (e.g. Adderall XR / amphetamine)
- 3010 CNS-Anxiolytics, sedatives, hypnotics (e.g. Ativan / lorazepam)
- 3210 CNS-Other (e.g. Strattera / atomoxetine)

The pharmacy claims do not contain diagnosis or indication information. To some extent the indication of the medication can be inferred by the type of medication. However, many medications have multiple indications and disorders may be treated by medications that are found in different REDBOOK drug categories. For example, Zoloft may be used to treat depression or obsessive compulsive disorder. Stimulants such as Adderall XR are used to treat ADHD, but Strattera is a non-stimulant used to treat ADHD.

**14. Payments.** This study includes a report comparing payments per member per month by plan type. Payments were identified from the claims data. Both plan payments and member responsibilities reported on claims were included. NH Medicaid, SCHIP or NH CHIS commercial payers may make retroactive payment settlements with hospitals. This study is based only on the payments reflected in the administrative claim files and could not adjust for any retroactive payment settlements.

Medicaid covers services that are typically not covered by private insurance or SCHIP. Medicaid payments identified by category of service (COS) as dental (COS 45) or private non-medical institutions (COS 78) were excluded in this and previous NH CHIS Children's Health Insurance report. A NH CHIS special study identified additional categories of service that are not typically covered by private insurance or SCHIP. Clinic services (COS 25) were determined to be school-based services primarily special education. Day habilitation (COS 60) are day services for the developmentally disabled and home and community based care for the developmentally impaired (COS 65) are waiver services. Crisis intervention (COS 72), intensive home and community services (COS 73), child health support services (COS 74), home-based therapy (COS 76), and placement services (COS 77) are all special services provided through the Division for Children, Youth, and Families (DCYF). ICF services for the mentally retarded (COS 102) are institutional services for the mentally retarded. For this report payments of all of these categories of service were excluded in the payment comparisons.

### **15. Special diagnosis codes for utilization reporting of Ambulatory Care Sensitive conditions.**

Five groups selected for inpatient ambulatory care sensitive conditions for children

- \*Asthma (any) 493xx

- \*Dehydration 276.50, 276.51, 276.52, 276.5
- \*Bacterial Pneumonia 481, 482.2, 482.30, 482.31, 482.32, 482.39, 482.9, 483.0, 483.1, 483.8, 485, 486
- \*Urinary Tract Infection 590.10, 590.11, 590.2, 590.3, 590.80, 590.81, 590.9, 595.0, 595.9 599.0
- \*\*Gastroenteritis 558.9

Additional codes selected for outpatient emergency department and office-clinic visit reporting

- \*\*\*Sore throat (Strep) 034.0
- \*\*\*Viral Infection (unspecified) 079.99
- \*\*\*Anxiety (unspecified or generalized) 300.00, 300.02
- \*\*\*Conjunctivitis (acute or unspecified) 372.00, 372.30
- \*\*\*External and middle ear infections (acute or unspecified) 380.10, 381.00, 381.01, 381.4, 382.00, 382.9
- \*\*\*Upper respiratory infections (acute or unspecified) 461.9, 473.9, 462, 465.9
- \*\*\*Bronchitis (acute or unspecified) or cough 466.0, 786.2, 490
- \*\*\*Dermatitis and rash 691.0, 691.8, 692.6, 692.9, 782.1
- \*\*\*Joint pain 719.40, 719.41, 719.42, 719.43, 719.44, 719.45, 719.46, 719.47, 719.48, 719.49
- \*\*\*Lower and unspecified back pain 724.2, 724.5
- \*\*\*Muscle and soft tissue limb pain 729.1, 729.5
- \*\*\*Fatigue 780.79
- \*\*\*Headache 784.0
- \*\*\*Abdominal pain 789.00, 789.01, 89.02, 789.03, 789.04, 789.05, 789.06, 789.07, 789.09

\* Source AHRQ Quality Indicators, Prevention Quality Indicators, Technical Specifications. Version 3.1 (March 12, 2007). Downloaded May 2, 2007.

[http://www.qualityindicators.ahrq.gov/downloads/pqi/pqi\\_technical\\_specs\\_v31.pdf](http://www.qualityindicators.ahrq.gov/downloads/pqi/pqi_technical_specs_v31.pdf)

\*\* Source: Billings J, Zeitel L, Lukomnik J, Carey TS, Blank AE, Newman L: Impact of socioeconomic status on hospital use in New York City. Health Aff 1993;(Spring):162- 173.

[http://www.umanitoba.ca/centres/mchp/concept/dict/ACS\\_conditions.html](http://www.umanitoba.ca/centres/mchp/concept/dict/ACS_conditions.html)

\*\*\* Source: 2005 Emergency Department Use in New Hampshire: A Comparison of the Medicaid and NH CHIS commercially Insured Populations. March, 2007 NH CHIS report.

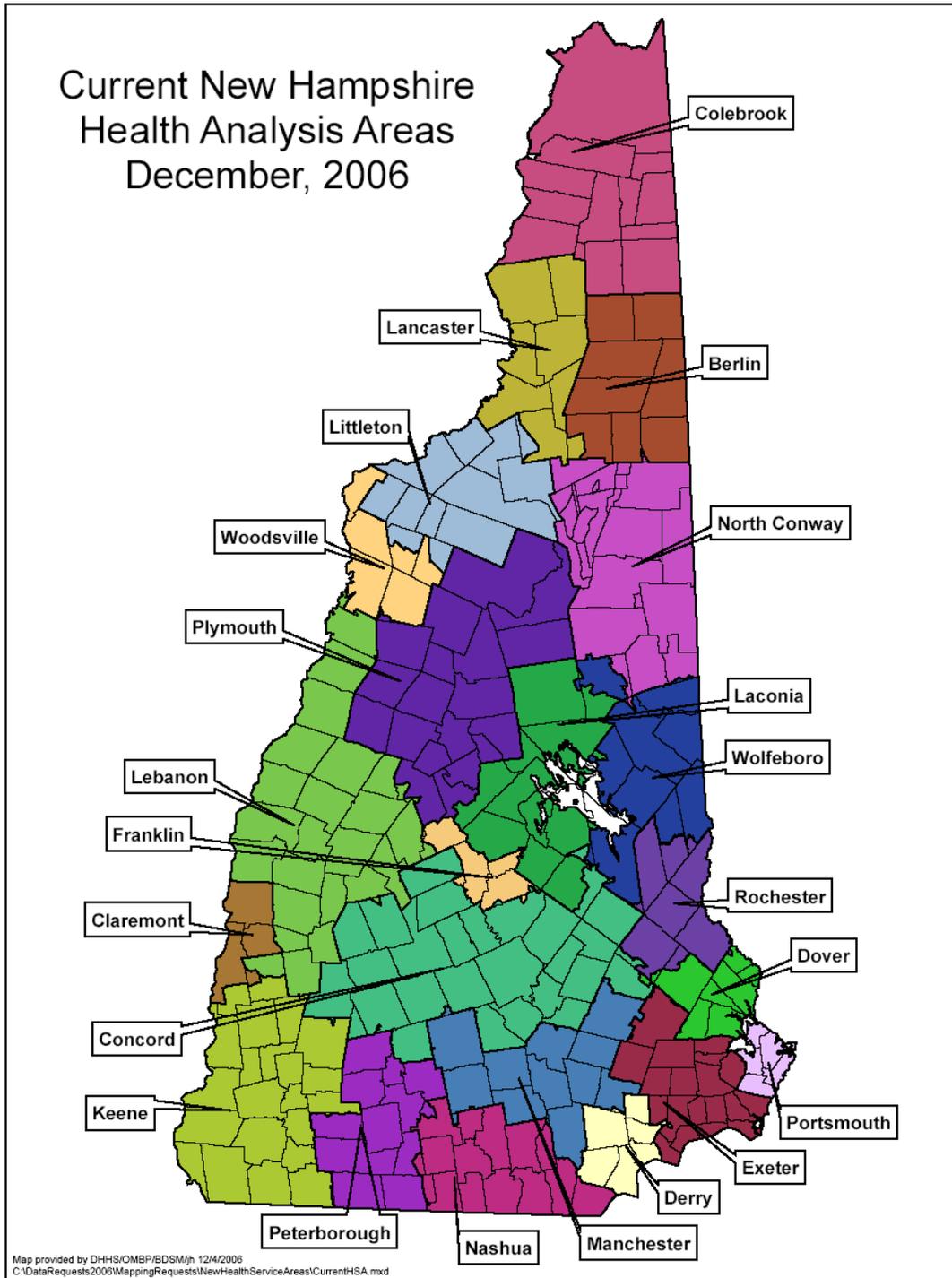
## Appendix 2: NH Medicaid Eligibility Groupings

Source: New Hampshire Comprehensive Health Information System Special Project: Defining Medicaid Eligibility Groups. Institute for Health Policy, Muskie School of Public Service, University of Southern Maine.

Aid Category w Code	Medicaid Benefits	Collapsed Groupings
10 OAA/CATEGORICALLY NEEDY	Yes	Elderly
11 OAA/MONEY PAYMENT/CATEGORICALLY NEEDY	Yes	Elderly
12 OAA/MEDICALLY NEEDY	Yes	Elderly
20 AFDC/CATEGORICALLY NEEDY	Yes	Low Income Adult/Child <sup>2</sup>
21 AFDC/MONEY PAYMENT/CATEGORICALLY NEEDY	Yes	Low Income Adult/Child
22 AFDC/MEDICALLY NEEDY	Yes	Low Income Adult/Child
24 AFDC/REG POV LVL/CAT NEEDY 185%FPL	Yes	Low Income Adult/Child
27 HEALTHY KIDS GOLD - EXPANDED ELIGIBILITY	Yes	Low Income Child
28 AFDC/POVLEV PREG WOMAN/CHILD/CAT/NEEDY170% FPL	Yes	Low Income Adult/Child
2B AFDC/HOME CARE-CHILD/SEVERE DISA/MEDI NEEDY	Yes	Severely Disabled Child
2C AFDC/CHILD WITH SEVERE DISABILITIES/CAT NEEDY	Yes	Severely Disabled Child
2D AFDC/CHILD WITH SEVERE DISABILITIES/MEDI NEEDY	Yes	Severely Disabled Child
2E AFDC/EXTENDED MA/FIRST 6 MONTH PERIOD/CAT NEEDY	Yes	Low Income Adult/Child
2F AFDC/EXT MA/SCND 6 MNTH PER/CAT NEEDY	Yes	Low Income Adult/Child
2H AFDC/POV LVL PREG WMN/CHILD/CAT NDY/REF170% FPL	Yes	Low Income Adult/Child
2K AFDC/HOME CARE-CHILD SEV DIS/CAT. NDY FOR INSTI	Yes	Severely Disabled Child
2U AFDC/AFDC-UP/MONEY PAYMENT/CATEGORICALLY NDY	Yes	Low Income Adult/Child
2V AFDC/AFDC-UP/CATEGORICALLY NEEDY/MA	Yes	Low Income Adult/Child
2W AFDC/AFDC-UP/MEDICALLY NEEDY	Yes	Low Income Adult/Child
2X ADFC/POV LVL PREG WOMEN/POV LVL CHLD CAT NEEDY	Yes	Low Income Adult/Child
30 ANB/CATEGORICALLY NEEDY	Yes	Disabled Physical
31 ANB/MONEY PAYMENT/CATEGORICALLY NEEDY	Yes	Disabled Physical
32 ANB/MEDICALLY NEEDY	Yes	Disabled Physical
40 IV-E-OR-MA /ADOPT SUB-CAT NEEDY	Yes	Low Income Child
41 AFDC/FC OR MONEY PAYMENT/CATEGORICALLY NDY	Yes	Low Income Child
42 AFDC/FC OR MEDICALLY NEEDY	Yes	Low Income Child
50 APTD/MENTAL/CATEGORICALLY NEEDY	Yes	Disabled Mental
51 APTD/MENTAL/MONEY PAYMENT/CATEGORICALLY NEEDY	Yes	Disabled Mental
52 APTD/MENTAL/MEDICALLY NEEDY	Yes	Disabled Mental
61 HEALTHY KIDS SILVER	No	Omitted
66 QUALIFIED MEDICARE BENEFICIARY - SLMB120	No	Omitted
67 QUALIFIED MEDICARE BENEFICIARY - SLMB135	No	Omitted
68 QUALIFIED MEDICARE BENEFICIARY - ODWI	No	Omitted
69 QMB	No	Omitted
70 APTD/PHYSICAL/CATEGORICALLY NEEDY	Yes	Disabled Physical
71 APTD/PHYSICAL/MONEY PAYMENT	Yes	Disabled Physical
72 APTD-PHYSICAL/MEDICALLY NEEDY	Yes	Disabled Physical
80 MEAD WITH ANB/APTD APPROVAL - BLIND	Yes	Disabled Physical
81 MEAD WITH ANB/APTD APPROVAL - PHYSICAL	Yes	Disabled Physical
82 MEAD WITH ANB/APTD APPROVAL - MENTAL	Yes	Disabled Mental
83 MEAD ONLY APPROVAL - BLIND	Yes	Disabled Physical
84 MEAD ONLY APPROVAL - PHYSICAL	Yes	Disabled Physical
85 MEAD ONLY APPROVAL - MENTAL	Yes	Disabled Mental

<sup>2</sup> Age at beginning of the last month of reporting period is used to designate member as Child <=18 or Adult >18.

### Appendix 3: Health Analysis Area Definitions



New Hampshire			New Hampshire		
Health Service Area	Zip Code	Zip Name	Health Service Area	Zip Code	Zip Name
Berlin	00169	Sucess	Franklin	03276	Tilton
Berlin	03570	Berlin	Franklin	03298	Tilton
Berlin	03581	Gorham	Franklin	03299	Tilton
Berlin	03588	Milan	Keene	03431	Keene
Berlin	03593	Randolph	Keene	03435	Keene
Claremont	03603	Charlestown	Keene	03441	Ashuelot
Claremont	03743	Claremont	Keene	03443	Chesterfield
Colebrook	00170	Second College Grant	Keene	03445	Sullivan
Colebrook	00186	Erving's Location	Keene	03446	Swanzy
Colebrook	00187	Dix Grant	Keene	03447	Fitzwilliam
Colebrook	03576	Colebrook	Keene	03448	Gilsum
Colebrook	03579	Errol	Keene	03450	Harrisville
Colebrook	03592	Pittsburg	Keene	03451	Hinsdale
Colebrook	03597	West Stewartstown	Keene	03455	Marlborough
Concord	03046	Dunbarton	Keene	03456	Marlow
Concord	03216	Andover	Keene	03457	Nelson
Concord	03218	Barnstead	Keene	03462	Spofford
Concord	03221	Bradford	Keene	03464	Stoddard
Concord	03224	Canterbury	Keene	03465	Troy
Concord	03225	Center Barnstead	Keene	03466	West Chesterfield
Concord	03229	Contoocook	Keene	03467	Westmoreland
Concord	03234	Epsom	Keene	03469	West Swanzy
Concord	03242	Henniker	Keene	03470	Winchester
Concord	03244	Hillsboro	Keene	03602	Alstead
Concord	03252	Lochmere	Keene	03604	Drewsville
Concord	03255	Newbury	Keene	03607	South Acworth
Concord	03258	Chichester	Keene	03608	Walpole
Concord	03261	Northwood	Keene	03609	North Walpole
Concord	03263	Pittsfield	Laconia	03220	Belmont
Concord	03268	Salisbury	Laconia	03226	Center Harbor
Concord	03272	South Newbury	Laconia	03227	Center Sandwich
Concord	03275	Suncook	Laconia	03237	Gilmanton
Concord	03278	Warner	Laconia	03246	Laconia
Concord	03280	Washington	Laconia	03247	Laconia
Concord	03301	Concord	Laconia	03249	Gilford
Concord	03302	Concord	Laconia	03253	Meredith
Concord	03303	Concord	Laconia	03254	Moultonborough
Concord	03304	Bow	Laconia	03256	New Hampton
Concord	03305	Concord	Laconia	03259	North Sandwich
Concord	03307	Loudon	Laconia	03269	Sanbornton
Concord	03837	Gilmanton Iron Works	Laconia	03289	Winnisquam
Derry	03038	Derry	Laconia	03883	South Tamworth
Derry	03041	East Derry	Lancaster	00185	Kilkenny
Derry	03073	North Salem	Lancaster	03582	Groveton
Derry	03079	Salem	Lancaster	03583	Jefferson
Derry	03087	Windham	Lancaster	03584	Lancaster
Derry	03811	Atkinson	Lancaster	03587	Meadows
Derry	03826	East Hampstead	Lancaster	03590	North Stratford
Derry	03841	Hampstead	Lebanon	03230	Danbury
Derry	03873	Sandown	Lebanon	03231	East Andover
Dover	03805	Rollinsford	Lebanon	03233	Elkins
Dover	03820	Dover	Lebanon	03240	Grafton
Dover	03821	Dover	Lebanon	03257	New London
Dover	03822	Dover	Lebanon	03260	North Sutton
Dover	03823	Madbury	Lebanon	03273	South Sutton
Dover	03824	Durham	Lebanon	03284	Springfield
Dover	03825	Barrington	Lebanon	03287	Wilmot
Dover	03869	Rollinsford	Lebanon	03601	Acworth
Dover	03878	Somersworth	Lebanon	03605	Lempster
Exeter	03042	Epping	Lebanon	03741	Canaan
Exeter	03044	Fremont	Lebanon	03745	Cornish
Exeter	03077	Raymond	Lebanon	03746	Cornish Flat
Exeter	03290	Nottingham	Lebanon	03748	Enfield
Exeter	03291	West Nottingham	Lebanon	03749	Enfield Center
Exeter	03819	Danville	Lebanon	03750	Etna
Exeter	03827	East Kingston	Lebanon	03751	Georges Mills
Exeter	03833	Exeter	Lebanon	03752	Goshen
Exeter	03842	Hampton	Lebanon	03753	Grantham
Exeter	03844	Hampton Falls	Lebanon	03754	Guild
Exeter	03848	Kingston	Lebanon	03755	Hanover
Exeter	03856	Newfields	Lebanon	03756	Lebanon
Exeter	03857	Newmarket	Lebanon	03765	Haverhill
Exeter	03858	Newton	Lebanon	03766	Lebanon
Exeter	03859	Newton Junction	Lebanon	03768	Lyme
Exeter	03865	Plaistow	Lebanon	03769	Lyme Center
Exeter	03874	Seabrook	Lebanon	03770	Meriden
Exeter	03885	Stratham	Lebanon	03773	Newport
Franklin	03235	Franklin	Lebanon	03777	Orford
Franklin	03243	Hill	Lebanon	03779	Piermont

New Hampshire			New Hampshire		
Health Service Area	Zip Code	Zip Name	Health Service Area	Zip Code	Zip Name
Lebanon	03781	Plainfield	Peterborough	03442	Bennington
Lebanon	03782	Sunapee	Peterborough	03444	Dublin
Lebanon	03784	West Lebanon	Peterborough	03449	Hancock
Littleton	03561	Littleton	Peterborough	03452	Jaffrey
Littleton	03574	Bethlehem	Peterborough	03458	Peterborough
Littleton	03580	Franconia	Peterborough	03461	Rindge
Littleton	03585	Lisbon	Peterborough	03468	West Peterborough
Littleton	03586	Sugar Hill	Plymouth	03215	Waterville Valley
Littleton	03595	Twin Mountain	Plymouth	03217	Ashland
Littleton	03598	Whitefield	Plymouth	03222	Bristol
Manchester	03032	Auburn	Plymouth	03223	Campton
Manchester	03034	Candia	Plymouth	03232	East Hebron
Manchester	03036	Chester	Plymouth	03241	Hebron
Manchester	03037	Deerfield	Plymouth	03245	Holderness
Manchester	03040	East Candia	Plymouth	03251	Lincoln
Manchester	03045	Goffstown	Plymouth	03262	North Woodstock
Manchester	03053	Londonderry	Plymouth	03264	Plymouth
Manchester	03070	New Boston	Plymouth	03266	Rumney
Manchester	03101	Manchester	Plymouth	03274	Stinson Lake
Manchester	03102	Manchester	Plymouth	03279	Warren
Manchester	03103	Manchester	Plymouth	03282	Wentworth
Manchester	03104	Manchester	Plymouth	03293	Woodstock
Manchester	03105	Manchester	Portsmouth	03801	Portsmouth
Manchester	03106	Hooksett	Portsmouth	03802	Portsmouth
Manchester	03107	Manchester	Portsmouth	03803	Portsmouth
Manchester	03108	Manchester	Portsmouth	03804	Portsmouth
Manchester	03109	Manchester	Portsmouth	03840	Greenland
Manchester	03110	Bedford	Portsmouth	03843	Hampton
Manchester	03111	Manchester	Portsmouth	03854	New Castle
Manchester	03281	Weare	Portsmouth	03862	North Hampton
Nashua	03031	Amherst	Portsmouth	03870	Rye
Nashua	03033	Brookline	Portsmouth	03871	Rye Beach
Nashua	03048	Greenville	Rochester	03815	Center Strafford
Nashua	03049	Hollis	Rochester	03835	Farmington
Nashua	03051	Hudson	Rochester	03839	Rochester
Nashua	03052	Litchfield	Rochester	03851	Milton
Nashua	03054	Merrimack	Rochester	03852	Milton Mills
Nashua	03055	Milford	Rochester	03855	New Durham
Nashua	03057	Mont Vernon	Rochester	03866	Rochester
Nashua	03060	Nashua	Rochester	03867	Rochester
Nashua	03061	Nashua	Rochester	03868	Rochester
Nashua	03062	Nashua	Rochester	03884	Strafford
Nashua	03063	Nashua	Rochester	03887	Union
Nashua	03064	Nashua	Wolfeboro	03809	Alton
Nashua	03076	Pelham	Wolfeboro	03810	Alton Bay
Nashua	03082	Lyndeborough	Wolfeboro	03814	Center Ossipee
Nashua	03086	Wilton	Wolfeboro	03816	Center Tuftonboro
North Conway	00168	Beans Purchase	Wolfeboro	03830	East Wakefield
North Conway	00172	Hadleys Purchase	Wolfeboro	03836	Freedom
North Conway	00173	Cutts Grant	Wolfeboro	03850	Melvin Village
North Conway	00174	Beans Grant	Wolfeboro	03853	Mirror Lake
North Conway	00176	Sargents Purchase	Wolfeboro	03864	Ossipee
North Conway	00177	Pinkham Grant	Wolfeboro	03872	Sanbornville
North Conway	00179	Chandlers Purchase	Wolfeboro	03882	Effingham
North Conway	00180	Thompson/Meserves Purch	Wolfeboro	03886	Tamworth
North Conway	00181	Low and Burbanks Grant	Wolfeboro	03894	Wolfeboro
North Conway	00182	Crawfords Purchase	Wolfeboro	03896	Wolfeboro Falls
North Conway	00183	Greens Grant	Wolfeboro	03897	Wonalancet
North Conway	00184	Martins Location	Woodsville	03238	Glenclyff
North Conway	03575	Bretton Woods	Woodsville	03740	Bath
North Conway	03589	Mount Washington	Woodsville	03771	Monroe
North Conway	03812	Bartlett	Woodsville	03774	North Haverhill
North Conway	03813	Center Conway	Woodsville	03780	Pike
North Conway	03817	Chocorua	Woodsville	03785	Woodsville
North Conway	03818	Conway			
North Conway	03832	Eaton Center			
North Conway	03838	Glen			
North Conway	03845	Intervale			
North Conway	03846	Jackson			
North Conway	03847	Kearsarge			
North Conway	03849	Madison			
North Conway	03860	North Conway			
North Conway	03875	Silver Lake			
North Conway	03890	West Ossipee			
Peterborough	03043	Francestown			
Peterborough	03047	Greenfield			
Peterborough	03071	New Ipswich			
Peterborough	03084	Temple			
Peterborough	03440	Antrim			

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