



# Children's Health Insurance Programs in New Hampshire

*Access, Prevention, Care Management, Utilization, and Payments,  
State Fiscal Year 2008*

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

October 2009

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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 (excluding severely disabled children), NH SCHIP (State Children's Health Insurance Program), and children enrolled in commercial health insurance plans in New Hampshire for SFY2008. The study updates the SFY2007 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 2008\* to study the following for New Hampshire children aged 0–18:

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

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*

- Compared to SFY2007, the average number of children covered during SFY2008 increased by 2% in Medicaid, increased by 3% in SCHIP, and declined by 5% in the CHIS commercial study data.
- For enrolled children at the start of the study period (July 2007), 50% of children in SCHIP disenrolled during the year compared to 28% of children enrolled in Medicaid. Twenty-three percent of the children who disenrolled from Medicaid re-enrolled later in the year compared to 11% in SCHIP. The SCHIP disenrollment rate is consistent with the nature of SCHIP, which provides temporary coverage until the family acquires other health insurance. Transitions between plan types are being examined in another NH CHIS study.

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\* This study was based on reports developed from the NH CHIS database as of March 2009. 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 March 2009. Some measures use state fiscal year 2007 data in addition to the 2008.

\*\* 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.

### *Health Status*

- Children’s health status was evaluated by applying Clinical Risk Groups (CRG)\* to the administrative claims data. A higher risk score indicating poorer health status. Among continuously enrolled members, Medicaid (0.658) had the highest average CRG risk score, while SCHIP (0.495) was lower and CHIS commercial (0.446) was lowest. The Medicaid risk score was 33% higher than SCHIP and 48% higher than CHIS commercial.
- Significant acute procedures, mental health disorders, chronic conditions (asthma), and some rare but potentially serious conditions (e.g., prematurity with birthweight < 1000 grams, epilepsy, cystic fibrosis) were contributors to Medicaid higher CRG scores compared with CHIS commercial.

### *Access to Primary Care Practitioner*

- The primary care practitioner access rate for children age 25 months to 6 years was higher for children was significantly higher in SCHIP (93.3%) compared to Medicaid (89.4%) or NH CHIS commercial (88.9%).

### *Well-Child Visit Rates*

- The well-child visit rate for children age 3–6 years was higher for children in SCHIP (82.7%) and NH CHIS commercial (77.7%) compared to Medicaid (69.9%). These differences were statistically significant.
- For each plan type, well-child visit rates declined with age; for example, within Medicaid 88.9% of children age 16–35 months had a well-child visit compared to 50.4% of adolescent children age 12–18 years.

### *Effectiveness of Care Management*

- The prevalence rate of asthma in Medicaid (9.2%) was double the NH CHIS commercial rate (4.3%) and higher than the SCHIP rate (8.0%); 91.0% of continuously enrolled children on Medicaid identified as having “persistent” asthma used appropriate controller medications, which was not statistically different from the SCHIP rate of 93.0%, and was slightly lower than the NH CHIS commercial rate of 94.6%.

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

- The mental health disorder prevalence rate for children enrolled in Medicaid (21.6%) was similar to the prevalence rate for SCHIP (20.0%) and higher than the rate for NH CHIS commercial (11.7%).
- The most common mental health disorder was attention-deficit hyperactivity disorder (ADHD) with similar prevalence in Medicaid (8.5%) and SCHIP (9.1%). The prevalence in NH CHIS commercial was lower (4.6%).
- The rate of psychotherapy visits for children with a mental health disorder was highest in Medicaid (5,875 per 1,000 members), lower in SCHIP (4,523 per 1,000), and lowest in CHIS commercial (3,672 per 1,000).

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\* 3M Health Systems Clinical Risk Grouper (CRG) uses all diagnosis codes from all health care administrative claims to assign an individual to a health status group and severity level if chronically ill. Over 260 different CRG categories were assigned relative risk weights based on a common Medicaid weight table provided by 3M. A higher risk weight indicates a greater burden of disease or disability.

- Among children with a mental health disorder, the prevalence of children using a psychotropic medication was slightly lower in Medicaid (57%) than CHIS commercial (61%).

### *Utilization and Payments*

*Note: For the purposes of comparing Medicaid, SCHIP, and CHIS commercial children, utilization and payment rates excluded newborns and infants (age 0-11 months) and were standardized for differences in health status (CRG) and age.*

- The inpatient hospitalization rate for Medicaid (23.3 per 1,000 members) was significantly higher than the SCHIP rate (16.6 per 1,000 members) or the NH CHIS commercial rate (15.8 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 (4.7 per 1,000 members) was higher than the SCHIP rate (1.9 per 1,000 members) and more than double the rate for NH CHIS commercial (1.7 per 1,000 members).
- The outpatient emergency department rate for Medicaid (519 per 1,000) was significantly higher than SCHIP (369 per 1,000) or CHIS commercial (227 per 1,000).
- 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 (240 per 1,000 members) was double that of SCHIP (114 per 1,000 members) and four times that of NH CHIS commercial (58 per 1,000 members).
- The office-clinic visit rate was highest in SCHIP (3,394 per 1,000) and lower in Medicaid (3,060 per 1,000) and CHIS commercial (2,995 per 1,000).
- Excluding special services specific to Medicaid, the payment rate for children per member per month (PMPM) was lower in Medicaid (\$128 PMPM) compared with SCHIP (\$145 PMPM) or NH CHIS commercial (\$157 PMPM).\*

### *Poverty Level for Children Enrolled in Medicaid*

- Medicaid children with continuous enrollment in the poorest households (0% FPL) had the poorest health as indicated by a higher average clinical risk (CRG) score (0.812) compared with children in households with the highest adjusted household income (134%-184%) average clinical risk score (0.580).
- For all Medicaid poverty level groups, health status was poorer than for SCHIP or CHIS commercial plan types.
- Results of the analysis indicate a consistent pattern of association between poverty, poor health status and higher utilization and payments.
- Children enrolled in Medicaid in the poorest households (0% FPL) had a payment rate (\$167 PMPM) that was 1.5 times higher than the rate for children in households with the highest adjusted household income (\$116 PMPM).

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\* These differences are influenced by Medicaid lower reimbursement rate per service compared with SCHIP or NH CHIS commercial plans.

**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 insurance plan delivery model and benefit structure. Medicaid is a fee-for-service program that: covers services without copayments; 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:** Children enrolled in Medicaid had poorer health status than children enrolled in SCHIP or CHIS commercial plans. After adjusting for health status and age differences, 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 higher rates of primary care practitioner access or well-child preventive visits compared to children in NH CHIS commercial. Children in NH Medicaid had equivalent or higher rates of access to primary care but lower rates of well-child preventive visits than CHIS commercial, although these were higher than national Medicaid averages. Rates of inpatient use for ambulatory care sensitive conditions and hospital outpatient emergency department visits for conditions that could be treated in a physician's office or clinic were higher for NH Medicaid compared with SCHIP or CHIS commercial. Payment rates per member per month were lower in NH Medicaid than SCHIP or CHIS commercial after exclusion of services covered only by Medicaid and adjustment for health status and age differences. Within Medicaid, poverty (child's household adjusted income) was a strong predictor of health status, utilization, and payment per month rates.

This report provided an update of the SFY2007 report on NH CHIS measures for children for SFY2008. Additional NH CHIS studies currently under way or planned include the following:

- children in Medicaid who did not receive a well-child visit;
- birth certificate claims linkage and associated outcomes and cost; and
- evaluation of coexisting mental disorders and multiple medication use for children with mental disorders.

## INTRODUCTION

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 declines 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 (Title 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 SFY2008, children represented over 64% 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.

In addition to this annual reporting, NH CHIS has developed issue specific studies for children. These included a detailed study of children in out-of-home placement (e.g., foster care) covered by NH Medicaid<sup>23</sup>, children's health status<sup>33</sup>, evaluations of ambulatory care sensitive inpatient and potential preventable outpatient emergency department use, geographical variations, adolescents, and mental health specialist visits.

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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 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.

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 health status by plan type;
- 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 SFY2008 (state fiscal year July, 2007–June 2008). For some statistical measures, a two-year window was required (July 2006–June 2008). SFY2006-SFY2008 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 SFY2008 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., Home Care for Children with Severe Disabilities 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 Hamp-

shire and from self-funded plans that do not use a third party 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 managed by Anthem, that includes traditional HMO elements like PCPs. The population represented in the CHIS commercial data is a mixture of Preferred Provider Organizations (26%), HMO (52%), Point-of-Service (12%), and Indemnity (10%).

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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. A NH CHIS study is currently under way to track migration between plan types, especially with regard to disenrollment and reenrollment in Medicaid.

This study compared insured populations that were very different from each other. Previous NH CHIS annual reports on children were limited in the evaluation of health status. This report provides a more detailed evaluation of health status by using clinical risk grouping (CRG). Utilization and payment rates in this report are standardized for popula-

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

tion differences in health status and age and have been added for this SFY2008 version of the annual report on children's health insurance.

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### **What's New in the SFY2008 Report**

New enhancements to the CHIP Annual report this year include:

- a comparison of the health status of children by plan type using Clinical Risk Groups (CRG);
- standardization for age and health status (CRG) of utilization (inpatient, outpatient emergency room, office-clinic visits) rates and payment per member per month rates by plan type;
- distinction of psychotherapy visits from other services provided by mental health specialists; and,
- evaluation by adjusted household income to poverty level ratios, of differences in utilization and payment rates, standardized for age and health status (CRG), for children enrolled in Medicaid.

# 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 SFY2008. 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 SFY2008 from the NH CHIS data are provided in Table 1. For children age 0–18 years in SFY 2008, 86,030 children were enrolled in Medicaid, 12,338 children were enrolled in SCHIP, and 159,528 children were represented in NH CHIS commercial insurance data.

**Table 1. Child Enrollment by Plan Type, SFY2008**

|                                      | Medicaid (Age 0-18) | SCHIP (Age 1-18) | NH CHIS Commercial (Age 0-18) |
|--------------------------------------|---------------------|------------------|-------------------------------|
| Unique Members Covered               | 86,030              | 12,338           | 159,528                       |
| Member Months                        | 811,379             | 89,586           | 1,475,748                     |
| Average Members per Month            | 67,615              | 7,466            | 122,979                       |
| Average Length of Enrollment         | 9.4                 | 7.3              | 9.3                           |
| Unique Members Continuously Enrolled | 61% (52,506)        | 34% (4,201)      | 61% (97,221)                  |

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. Continuous enrollment is based on NCQA HEDIS and is defined as 11 or more months of enrollment during the year which allows for a 1-month gap.

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 Average Members Covered by Age Group and Plan Type, SFY2008**

| Age Group              | Medicaid      | SCHIP        | NH CHIS Commercial |
|------------------------|---------------|--------------|--------------------|
| Total All Ages 0 to 18 | 100% (67,615) | 100% (7,466) | 100% (122,979)     |
| <1 (0–11 mos)          | 5% (3,665)    | NA           | 2% (2,619)         |
| 1–2 (12–35 mos)        | 13% (8,779)   | 9% (639)     | 8% (9,532)         |
| 3–6 (36 mos–6 yrs)     | 22% (15,197)  | 21% (1,566)  | 17% (21,420)       |
| 7–11                   | 26% (17,489)  | 28% (2,120)  | 25% (30,783)       |
| 12–18                  | 33% (22,485)  | 42% (3,141)  | 48% (58,626)       |

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). Counts are average members covered (member months / 12).

Compared to SFY2007, the average number of children covered during SFY2008 increased by 2% in Medicaid, increased by 3% in SCHIP, and declined by 5% 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 63% 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, Manchester, Keene, Peterborough) were less well represented while interior and northern areas (Berlin, North Conway, Lancaster, Littleton, Laconia, Woodsville) 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.

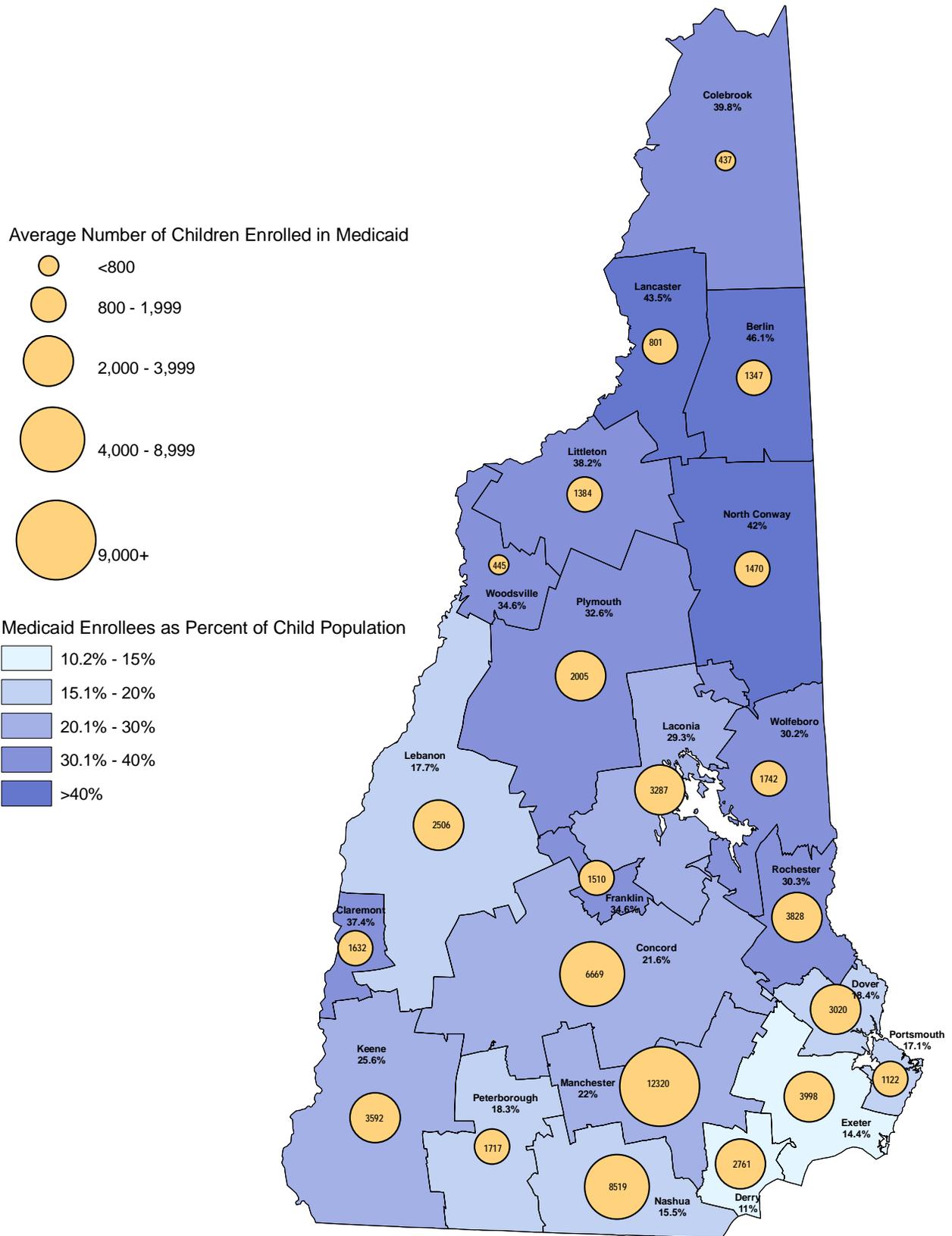
**Table 3. Child Census Estimate, Average Members by Plan Type and Health Analysis Area, SFY2008**

| 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          | 1,329,095                         | 313,913                           | 67,615                   | 7,466                 | 122,979                            |
| Berlin               | 15,060                            | 2,924                             | 1,347                    | 165                   | 1,211                              |
| Claremont            | 19,426                            | 4,360                             | 1,632                    | 108                   | 1,649                              |
| Colebrook            | 5,769                             | 1,097                             | 437                      | 32                    | 303                                |
| Concord              | 133,392                           | 30,878                            | 6,669                    | 829                   | 16,424                             |
| Derry                | 98,927                            | 25,171                            | 2,761                    | 351                   | 6,880                              |
| Dover                | 71,017                            | 16,396                            | 3,020                    | 317                   | 6,127                              |
| Exeter               | 117,265                           | 27,744                            | 3,998                    | 607                   | 9,237                              |
| Franklin             | 18,911                            | 4,371                             | 1,510                    | 143                   | 1,746                              |
| Keene                | 65,388                            | 14,025                            | 3,592                    | 329                   | 5,131                              |
| Laconia              | 54,760                            | 11,212                            | 3,287                    | 413                   | 5,308                              |
| Lancaster            | 8,395                             | 1,843                             | 801                      | 91                    | 643                                |
| Lebanon              | 66,422                            | 14,159                            | 2,506                    | 322                   | 8,043                              |
| Littleton            | 16,875                            | 3,618                             | 1,384                    | 190                   | 1,336                              |
| Manchester           | 221,123                           | 55,884                            | 12,320                   | 1,059                 | 21,965                             |
| Nashua               | 212,241                           | 54,980                            | 8,519                    | 832                   | 18,826                             |
| North Conway         | 17,765                            | 3,498                             | 1,470                    | 219                   | 1,400                              |
| Peterborough         | 36,560                            | 9,371                             | 1,717                    | 249                   | 4,094                              |
| Plymouth             | 28,897                            | 6,154                             | 2,005                    | 278                   | 2,404                              |
| Portsmouth           | 35,631                            | 6,547                             | 1,122                    | 138                   | 3,115                              |
| Rochester            | 50,727                            | 12,635                            | 3,828                    | 374                   | 4,299                              |
| Wolfeboro            | 28,055                            | 5,759                             | 1,742                    | 339                   | 2,339                              |
| Woodsville           | 6,489                             | 1,287                             | 445                      | 81                    | 499                                |

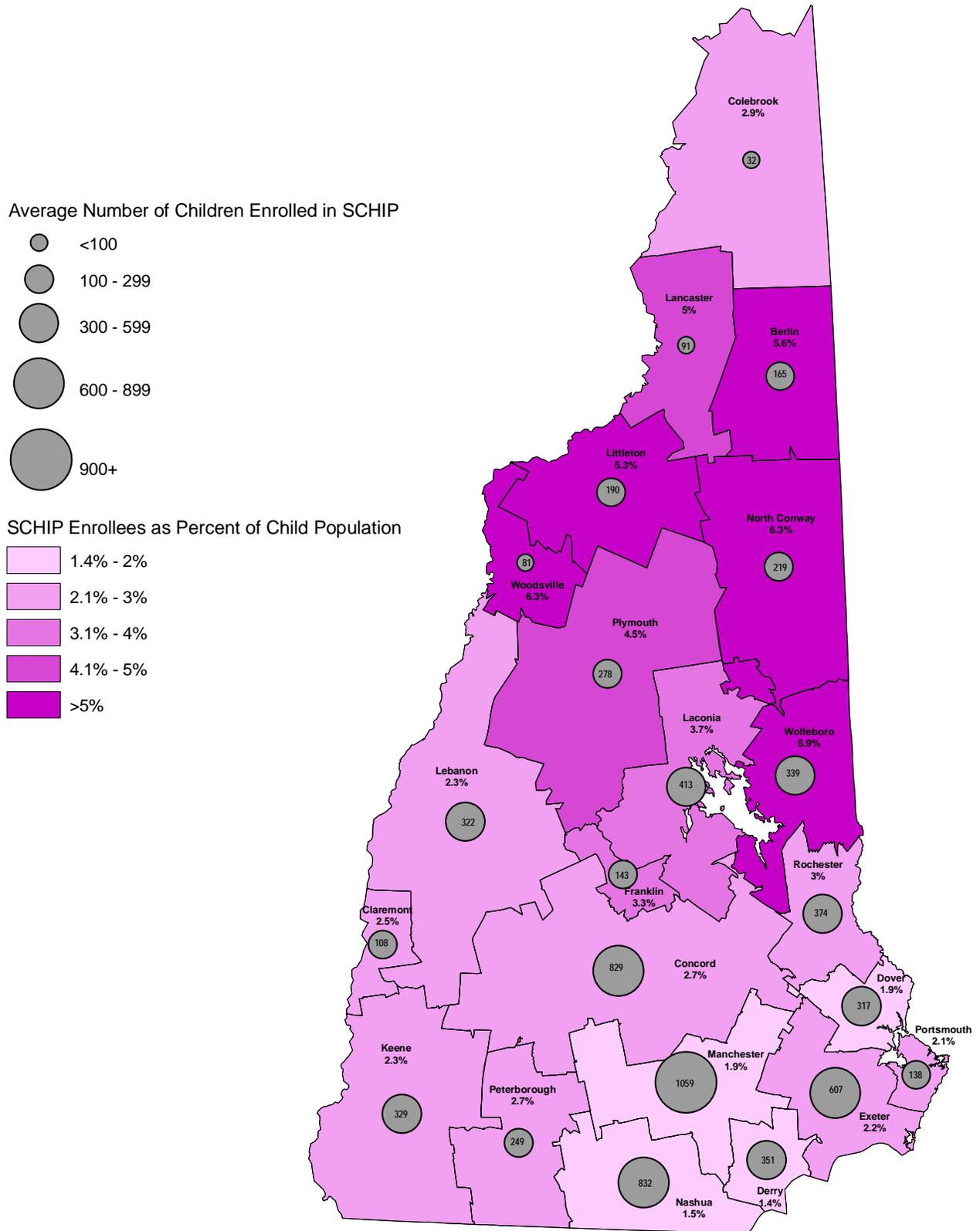
Note: Average members = member months / 12. Population estimates are from Claritas. NH CHIS Commercial represents membership contained in the CHIS database, and is not a complete count of the commercially insured. No data is available on counts of uninsured.

There was significant variability in population estimates and plan enrollment by HAA. The largest number of children in New Hampshire resided in the Manchester (55,884), Nashua (54,980), and Concord (30,878) areas. The areas with a higher percentage of children of total population were Nashua (26%), Peterborough (26%), Derry (25%), and Manchester (25%).

**Figure 1. NH Medicaid Enrollees Age 0–18 as a Percent of Total Child Population by Health Analysis Area, Average for SFY2008<sup>24</sup>**



**Figure 2. NH SCHIP Enrollees Age 1–18 as a Percent of Total Child Population by Health Analysis Area, Average for SFY2008<sup>25</sup>**



The areas with lower percentage of total population that were children were Portsmouth (18%), Colebrook (19%), and Berlin (19%). 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 and SFY2007.

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 (15%), the lowest percentage of children covered by Medicaid (11%), and the lowest percentage of children covered by SCHIP (1%). Nashua, Exeter, Peterborough, Portsmouth, and Manchester 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 (39%), the highest percentage of children covered by Medicaid (46%) and one of the higher percentages covered by SCHIP (6%). Colebrook, Lancaster, Littleton, Claremont, North Conway, and Franklin also had a higher percentage of households with income below \$30,000 and a higher percentage of children enrolled in Medicaid.

**Table 4. Selected Child Demographic Statistics by Plan Type and Health Analysis Area, SFY2008**

| 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%  | 63%  | 21%   | 22%                                    | 2%                                  |
| Berlin               | 19%  | 93%  | 39%   | 46%                                    | 6%                                  |
| Claremont            | 22%  | 78%  | 30%   | 37%                                    | 2%                                  |
| Colebrook            | 19%  | 70%  | 35%   | 40%                                    | 3%                                  |
| Concord              | 23%  | 77%  | 22%   | 22%                                    | 3%                                  |
| Derry                | 25%  | 40%  | 15%   | 11%                                    | 1%                                  |
| Dover                | 23%  | 58%  | 22%   | 18%                                    | 2%                                  |
| Exeter               | 24%  | 50%  | 17%   | 14%                                    | 2%                                  |
| Franklin             | 23%  | 78%  | 30%   | 35%                                    | 3%                                  |
| Keene                | 21%  | 65%  | 26%   | 26%                                    | 2%                                  |
| Laconia              | 20%  | 80%  | 24%   | 29%                                    | 4%                                  |
| Lancaster            | 22%  | 83%  | 32%   | 43%                                    | 5%                                  |
| Lebanon              | 21%  | 77%  | 20%   | 18%                                    | 2%                                  |
| Littleton            | 21%  | 80%  | 31%   | 38%                                    | 5%                                  |
| Manchester           | 25%  | 63%  | 21%   | 22%                                    | 2%                                  |
| Nashua               | 26%  | 51%  | 15%   | 15%                                    | 2%                                  |
| North Conway         | 20%  | 88%  | 30%   | 42%                                    | 6%                                  |
| Peterborough         | 26%  | 65%  | 19%   | 18%                                    | 3%                                  |
| Plymouth             | 21%  | 76%  | 28%   | 33%                                    | 5%                                  |
| Portsmouth           | 18%  | 67%  | 21%   | 17%                                    | 2%                                  |
| Rochester            | 25%  | 67%  | 25%   | 30%                                    | 3%                                  |
| Wolfeboro            | 21%  | 77%  | 27%   | 30%                                    | 6%                                  |
| Woodsville           | 20%  | 80%  | 26%   | 35%                                    | 6%                                  |

Note: Statistical analysis indicated that percentage of household income below \$30,000 in an area predicted 91% (r-square=0.91) of the variability in percentage of children in an area enrolled in Medicaid and 44% (r-squared=0.44) 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=0.59). 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 SFY2008 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 30% of the children enrolled in SCHIP remained on the program for the full year compared to 56% for Medicaid and 55% for NH CHIS commercial. Thirty-nine 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 (9.4 months) or CHIS commercial (9.3 months) averaged longer periods of enrollment by the plan compared with SCHIP (7.3 months) during the year.

**Table 5. Child Length of Enrollment by Plan Type, SFY2008**

|   | Medicaid      | SCHIP         | NH CHIS Commercial |
|---|---------------|---------------|--------------------|
| Total   | 100% (86,030) | 100% (12,338) | 100% (159,528)     |
| 1 to 2 months                                     | 8% (6,559)    | 18% (2,181)   | 9% (14,313)        |
| 3 to 5 months                                     | 12% (10,101)  | 22% (2,664)   | 12% (18,616)       |
| 6 to 8 months                                     | 11% (9,816)   | 17% (2,148)   | 12% (19,175)       |
| 9 to 11 months                                    | 13% (11,218)  | 14% (1,706)   | 13% (20,435)       |
| 12 months   | 56% (48,336)  | 30% (3,639)   | 55% (86,989)       |
| % children enrolled 12 months with <= 1 month gap | 61%           | 34%           | 61%                |
| Average Length of Enrollment in Months            | 9.4           | 7.3           | 9.3                |

Table 6 presents information based on a cohort of children who were enrolled during July 2007. For this cohort of children, their disenrollment and reenrollment in the same plan type was tracked for 12 months. For the 67,062 children enrolled in Medicaid, 18,726 (28%) disenrolled at some point during the 12 months. This was similar to the rate for NH CHIS commercial (31%) and lower than the rate for SCHIP (50%). For the 18,726 children enrolled in Medicaid who disenrolled during the year, 4,307 (23%) would reenroll in Medicaid later in the year. For the 3,647 children in SCHIP who disenrolled during the year, 406 (11%) would reenroll in SCHIP later in the year and for the 38,876 NH CHIS commercial children who disenrolled during the year, 8,495 (22%) would reenroll in a NH CHIS com-

mercial 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, SFY2008**

|  | <b>Medicaid</b> | <b>SCHIP</b> | <b>NH CHIS Commercial</b> |
|--|-----------------|--------------|---------------------------|
| Members with enrollment in July 2007           | 67,062          | 7,286        | 125,865                   |
| Disenrolled during SFY2008                     | 18,726          | 3,647        | 38,876                    |
| % Disenrolled                                  | 28%             | 50%          | 31%                       |
| Disenrolled and then reenrolled during SFY2008 | 4,307           | 406          | 8,495                     |
| % Reenrolled                                   | 23%             | 11%          | 22%                       |

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>26</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 not evaluated in this study but is the topic of another NH CHIS study currently under way.

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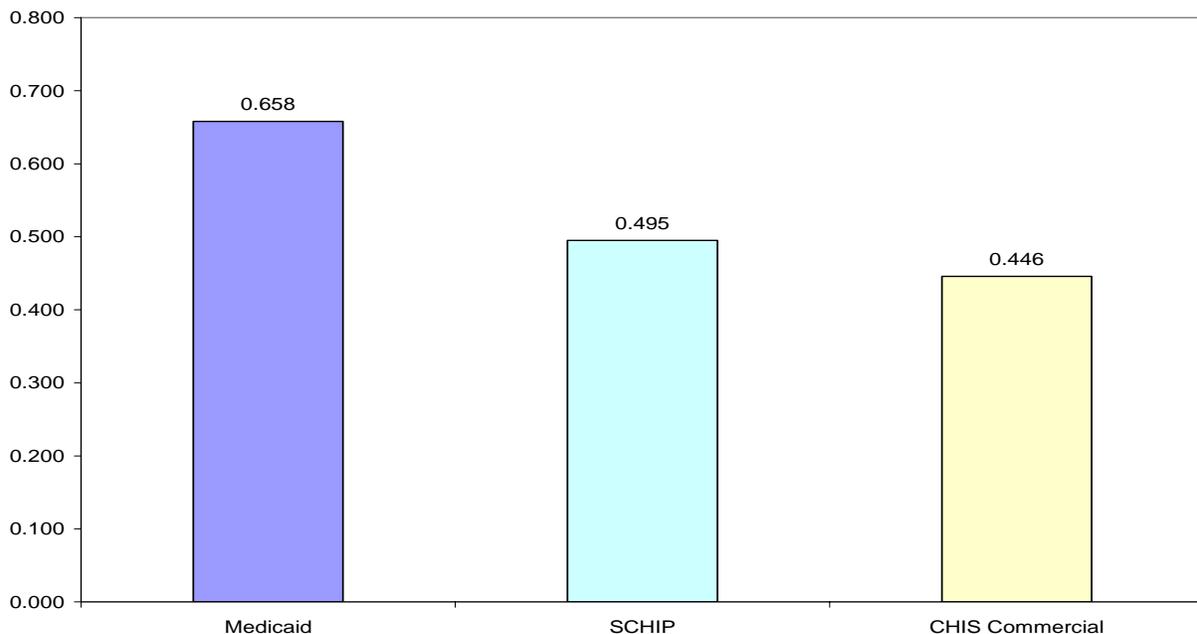
## Health Status

The intent of this section of the report is to provide information on the health status of children enrolled in NH health plans. A previous NH CHIS report on children's health insurance programs in New Hampshire during State Fiscal Year 2007 contained a variety of utilization and payment measures that suggest that low-income children enrolled in Medicaid had poorer health status compared with children enrolled in SCHIP or CHIS commercial plans.<sup>27</sup> Lack of clinical health risk adjustment was noted as a limitation in that report.

There are a number of systems available that can be used with administrative claims to assign a health status classification and relative clinical risk score for the members covered by a health plan.<sup>28</sup> These groupers were reviewed in a previous NH CHIS study<sup>29</sup> and two groupers were evaluated in detail against the NH Medicaid and CHIS Commercial claims data: 3M Health Systems Clinical Risk Grouper (CRG) and the Ingenix Episode Risk Grouper (ERG). The 3M CRG grouper was selected by NH CHIS for further use.<sup>30</sup> Other studies have effectively utilized CRG to evaluate the health status of children.<sup>31,32</sup>

Because CRG health status scoring is based on the administrative claims incurred by a child during the year, children who are enrolled for a shorter period of time during the year may be less likely to incur claims for conditions they may have. Therefore, the comparison of average CRG risk score by plan was based on children who were continuously enrolled during the year. Results are provided in Figure 3 and Tables 7 and 8.

**Figure 3. Average CRG Risk Score by Plan Type for Children Continuously enrolled, SFY2008**



Among continuously enrolled members, Medicaid (0.658) had the highest average CRG risk score, while SCHIP (0.495) was lower and CHIS commercial (0.446) was lowest. The Medicaid risk score was 33% higher than SCHIP and 48% higher than CHIS commercial. The same relative pattern was also found for children not continuously enrolled. Based on the 95% confidence intervals, the differences in health status between the plan types was statistically significant.

Table 7 provides a summary of trends in average CRG scores by state fiscal year and plan type. The finding that health status was poorest for children enrolled in Medicaid, better for SCHIP, and best for CHIS commercial was consistent for each of the past three state fiscal years.

**Table 7. Average CRG Risk Score (95% confidence intervals) by State Fiscal Year and Plan Type**

| State Fiscal Year (SFY)       | Medicaid            | SCHIP               | NH CHIS Commercial  |
|-------------------------------|---------------------|---------------------|---------------------|
| Members Continuously Enrolled |                     |                     |                     |
| SFY2006                       | 0.708 (0.698,0.719) | 0.518 (0.494,0.542) | 0.463 (0.459,0.468) |
| SFY2007                       | 0.696 (0.686,0.706) | 0.506 (0.485,0.528) | 0.479 (0.474,0.484) |
| SFY2008                       | 0.658 (0.649,0.668) | 0.495 (0.472,0.517) | 0.446 (0.442,0.451) |

95% confidence intervals in parentheses. During SFY8002 among members not continuously enrolled, Medicaid (0.375) also had the highest average CRG risk score, while SCHIP (0.309) was lower and CHIS commercial (0.287) was lowest.

Table 8 provides the distribution of the study populations at the highest level of CRG aggregation. The proportion of children identified as Healthy enrolled in SCHIP (82.5%) and CHIS commercial (83.0%) was higher than the proportion identified as Healthy in Medicaid (75.3%). One in four children enrolled in Medicaid were not healthy based on CRG clinical risk groups. Healthy User includes children who sought care for minor illnesses (e.g., sore throat, upper respiratory infection).

Children enrolled in Medicaid were least likely to be non-users of health care services (6.8%) compared with children enrolled in SCHIP (14.8%) and CHIS commercial (20.9%) plans.

Although Medicaid covers fewer children than the CHIS commercial population, Medicaid covered a much larger number of children with significant chronic diseases in multiple organ systems and the proportion in Medicaid was more than twice as high as CHIS commercial.

Table 8 provides CRGs at the highest level of aggregation. CRGs were also analyzed at the most detailed level of classification (268 different categories). Medicaid and SCHIP were compared to CHIS commercial to determine which CRGs were the primary drivers of higher CRG risk scores between these study populations. Significant acute procedures, mental health disorders, chronic conditions (e.g., asthma), and some rare but potentially serious conditions (e.g., prematurity with birthweight < 1000 grams, epilepsy, cystic fibrosis) were contributors to Medicaid higher CRG scores compared with CHIS commercial.

**Table 8. Percent of Average Members by Major CRG Category and Plan Type, SFY2008**

| <b>Major CRG Category</b>                               | <b>Medicaid</b>       | <b>SCHIP</b>         | <b>NH CHIS Commercial</b> |
|---|-----------------------|----------------------|---------------------------|
| Total All Categories                                    | 100.0% (67,615)       | 100.0% (7,466)       | 100.0% (122,979)          |
| Healthy   | 75.3% (50,881)        | 82.5% (6,158)        | 83.0% (102,076)           |
| <i>Healthy Non-User</i>                                 | <i>6.8% (4,565)</i>   | <i>14.8% (1,105)</i> | <i>20.9% (25,682)</i>     |
| <i>Healthy User</i>                                     | <i>68.5% (46,317)</i> | <i>67.7% (5,053)</i> | <i>62.1% (76,395)</i>     |
| History Of Significant Acute Disease                    | 8.7% (5,915)          | 6.0% (445)           | 5.9% (7,271)              |
| Single Minor Chronic Disease                            | 6.5% (4,414)          | 5.9% (437)           | 4.9% (6,085)              |
| Minor Chronic Disease In Multiple Organ Systems         | 0.4% (275)            | 0.3% (22)            | 0.3% (328)                |
| Single Dominant Or Moderate Chronic Disease             | 7.9% (5,331)          | 5.0% (376)           | 4.7% (5,758)              |
| Significant Chronic Disease In Multiple Organ Systems   | 1.0% (647)            | 0.3% (20)            | 0.4% (491)                |
| Dominant Chronic Disease In Three Or More Organ Systems | 0.0% (6)              | 0.0% (0)             | 0.0% (0)                  |
| Dominant, Metastatic, And Complicated Malignancies      | 0.0% (31)             | 0.0% (1)             | 0.0% (44)                 |
| Catastrophic Conditions                                 | 0.2% (115)            | 0.1% (7)             | 0.1% (98)                 |

Counts are average members covered (member months / 12). Rows in italics distinguish members classified by CRG as health with no service claims (healthy non-user) from members classified by CRG as healthy with service claims.

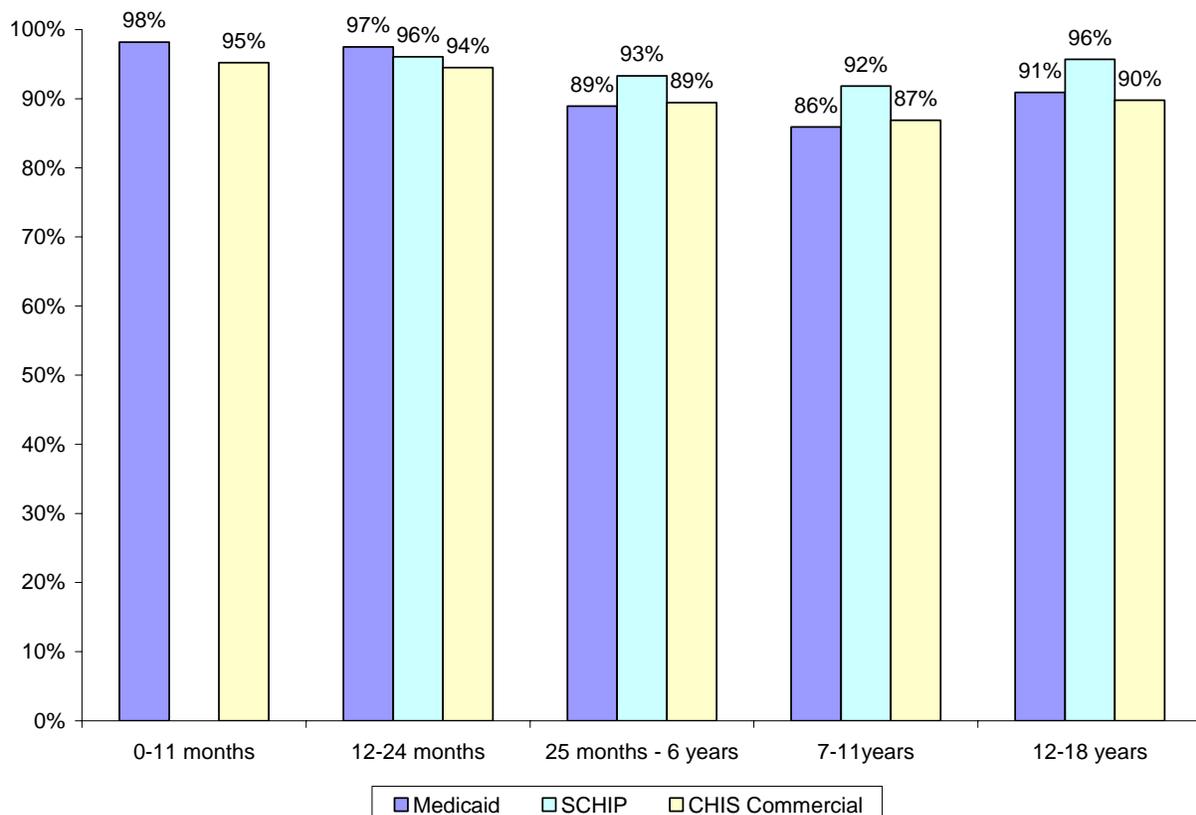
A more detailed CRG report on SFY2008 for children in New Hampshire health plans has been completed.<sup>33</sup>

## 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 4 and Table 9. The primary care practitioner access rate for children age 25 months to 6 years was significantly higher for children in SCHIP (93%) compared to Medicaid (89%) or NH CHIS commercial (89%).

**Figure 4. Percent of Children with Access to Primary Care Practitioner During the Year by Age, SFY2008**



For Medicaid, the rate of access to primary care practitioners ranged from a low of 85.9 percent for children age 7–11 years to a high of 98.2 percent 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 similar to national HEDIS commercial rates.

**Table 9. Percent of Children with Access to Primary Care Practitioner by Plan Type, SFY2008**

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   | 98.2% (97.2-99.2) | NA                 | 95.2% (93.0-97.4)   |
| 12–24 months  | 97.5% (97.0-98.0) | 96.1% (89.8-100.0) | 94.5% (93.7-95.2)   |
| 25 months–6 years   | 88.9% (88.4-89.4) | 93.3% (91.7-94.9)  | 89.4% (89.0-89.9)   |
| 7–11 years  | 85.9% (85.2-86.5) | 91.8% (89.6-94.0)  | 86.9% (86.4-87.4)   |
| 12–18 years   | 90.9% (90.4-91.4) | 95.7% (94.4-97.0)  | 89.8% (89.5-90.1)   |
| National 2008 NCQA Managed Care Plan HEDIS Reporting Year     |                   |                    |                     |
| Age Group   | Medicaid          | Commercial         |                     |
| 12–24 months  | 93.4%             | 96.9%              |                     |
| 25 months–6 years   | 84.3%             | 89.4%              |                     |
| 7–11 years  | 85.8%             | 89.5%              |                     |
| 12–19 years   | 82.6%             | 86.9%              |                     |

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 do not indicate any clear trend in the access to primary care measure. For NH Medicaid, SCHIP, or CHIS commercial there is no evidence of any trend in rates over the past three years (SFY2006-SFY2008). For SCHIP, there was a statistically significant increase for children age 7-11 (+7%) and children age 12-18 (+4%) between SFY2006 and SFY2007 but no significant trend between SFY2007 and SFY2008.

Table 10 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 0.6 months to a first visit, newly enrolled toddlers age 12–24 months averaged 1.7 months to a first visit.

**Table 10. Average Number of Months from Enrollment to First Primary Care Practitioner Visit for New Enrollees by Plan Type, SFY2008**

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

| Age Group         | Medicaid    | SCHIP     | NH CHIS Commercial |
|-------------------|-------------|-----------|--------------------|
| 0–11 months       | 0.6 (2,866) | NA        | 0.4 (1,779)        |
| 12–24 months      | 1.7 (410)   | 0.8 (199) | 1.0 (751)          |
| 25 months–6 years | 2.2 (1,306) | 1.6 (432) | 1.9 (2,060)        |
| 7–11 years        | 2.3 (968)   | 1.7 (374) | 2.0 (1,730)        |
| 12–18 years       | 2.1 (1,312) | 1.8 (467) | 2.0 (2,691)        |

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 1.7 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. There has been little change in these results during SFY2006, SFY2007, and SFY2008.

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 measure determines if a child ever visited a primary care practitioner during the year and the visits used for the measure include both visits for preventive services and visits for medical illness and other problems. Measurement of any well-child preventive visit is reported in the next section.

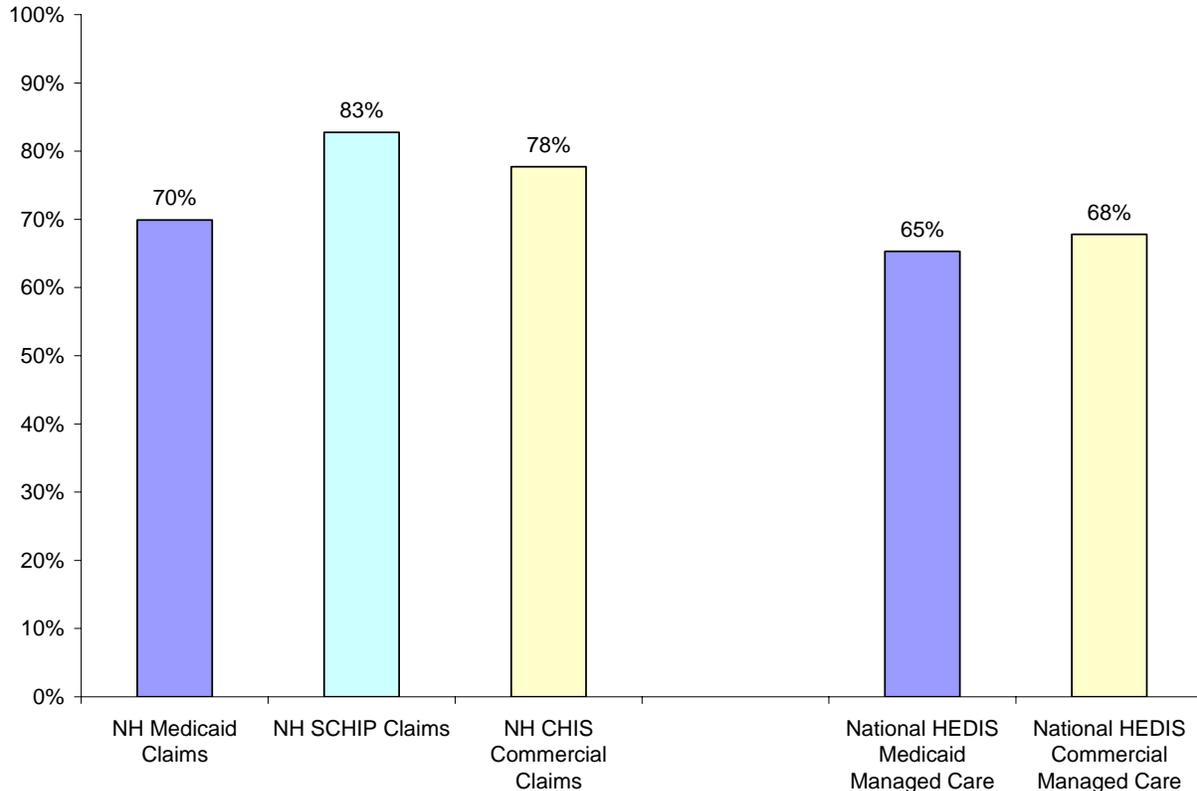
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## Well-Child Visits

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 5 and Table 11 provide well-child visit rates by plan type. For each plan type, well-child visit rates declined with age; for example, within Medicaid 88.9 percent of children age 16–35 months had a well-child visit compared to 50.4 percent 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 (82.7%) and NH CHIS commercial (77.7%) compared to Medicaid (69.9%). These differences were statistically significant.

**Figure 5. Percent of Children Age 3 to 6 Years with a Well-Child Visit During the Year, SFY2008**



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.

**Table 11. Percent of Children With a Well-Child Visit to a Primary Care Practitioner by Plan Type, SFY2008**

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  | 88.9% (88.1-89.8) | 95.4% (92.4-98.4) | 89.0% (88.1-89.8)       |
| 3–6 years   | 69.9% (69.1-70.7) | 82.7% (80.1-85.4) | 77.7% (77.0-78.4)       |
| 7–11 years  | 55.0% (54.2-55.8) | 63.0% (60.2-65.8) | 61.3% (60.7-62.0)       |
| 12–18 years   | 50.4% (49.7-51.2) | 57.3% (55.0-59.6) | 55.4% (54.9-55.8)       |
| First 15 Months of Life, denominator (see table note)     | 3,588             | 261               | Not reliable – see note |
| 0 visits  | 2% (56)           | 0% (0)            |                         |
| 1 visit   | 1% (50)           | 1% (2)            |                         |
| 2 visits  | 3% (100)          | 1% (3)            |                         |
| 3 visits  | 5% (179)          | 4% (10)           |                         |
| 4 visits  | 9% (326)          | 8% (20)           |                         |
| 5 visits  | 15% (555)         | 15% (39)          |                         |
| 6 or more visits  | 65% (2,322)       | 72% (187)         |                         |
| National 2008 NCQA Managed Care Plan HEDIS Reporting Year |                   |                   |                         |
| Age Group   | Medicaid          | Commercial        |                         |
| 3–6 years   | 65.3%             | 67.8%             |                         |
| 12–21 years   | 42.0%             | 41.8%             |                         |
| First 15 Months of Life                                   |                   |                   |                         |
| 0 visits  | 5.6%              | 1.8%              |                         |
| 1 visit   | 3.3%              | 1.1%              |                         |
| 2 visits  | 3.9%              | 1.5%              |                         |
| 3 visits  | 6.2%              | 2.7%              |                         |
| 4 visits  | 10.9%             | 5.8%              |                         |
| 5 visits  | 17.2%             | 14.5%             |                         |
| 6 or more visits  | 53.0%             | 72.8%             |                         |

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. Commercial rates for well-child visits during the first 15 months are not reported because of limitations in the claims data and health plans reporting this measure for NCQA HEDIS commonly use supplementary data sources not available to NH CHIS. Two large health plans with claims included in the New Hampshire commercial claims data were contacted and one indicated that supplementary data sources not available to NH CHIS were used for this measure and the other plan did not respond to inquiries.

A three-year trend was evaluated. While results varied slightly by age, rates of well-child visit increased slightly for each plan type between SFY2006, SFY2007, and SFY2008. For adolescents age 12-18 years the rate for Medicaid increased from 46.3% in SFY2006 to 48.5% in SFY2007 to 50.4% in SFY2008. For CHIS commercial rates for adolescents increased from 51.8% in SFY2006 to 53.7% in SFY2007 to 55.4% in SFY2008. While SCHIP rates increased the trend was not statistically significant due to the small number of chil-

dren with the continuous enrollment enrolled in SCHIP. The rate of increase for NH Medicaid and CHIS commercial was similar to the rate of increase nationally based on the NCQA HEDIS managed care audited results for the three-year time period.

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. There was some evidence of a slight increase in well-child visits over a three-year period, and rates have gone up slightly nationally based on NCQA reporting for Medicaid and commercial managed care plans.

A significant number of children did not receive a well-child preventive visit. A NH CHIS special study of children with no preventive visit is under way to determine what factors are associated with children who did not receive a preventive visit. The NCQA HEDIS well-child measure is based on preventive visits occurring during a single year of time. It is possible that some of the children, in particular older children and adolescents, may have received a well-child preventive visit during the period after the end of the year. This study will also address whether children and adolescents received a visit during a wider time period (e.g., during a 15 month or 2-year time window).

## 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 (URI). 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).

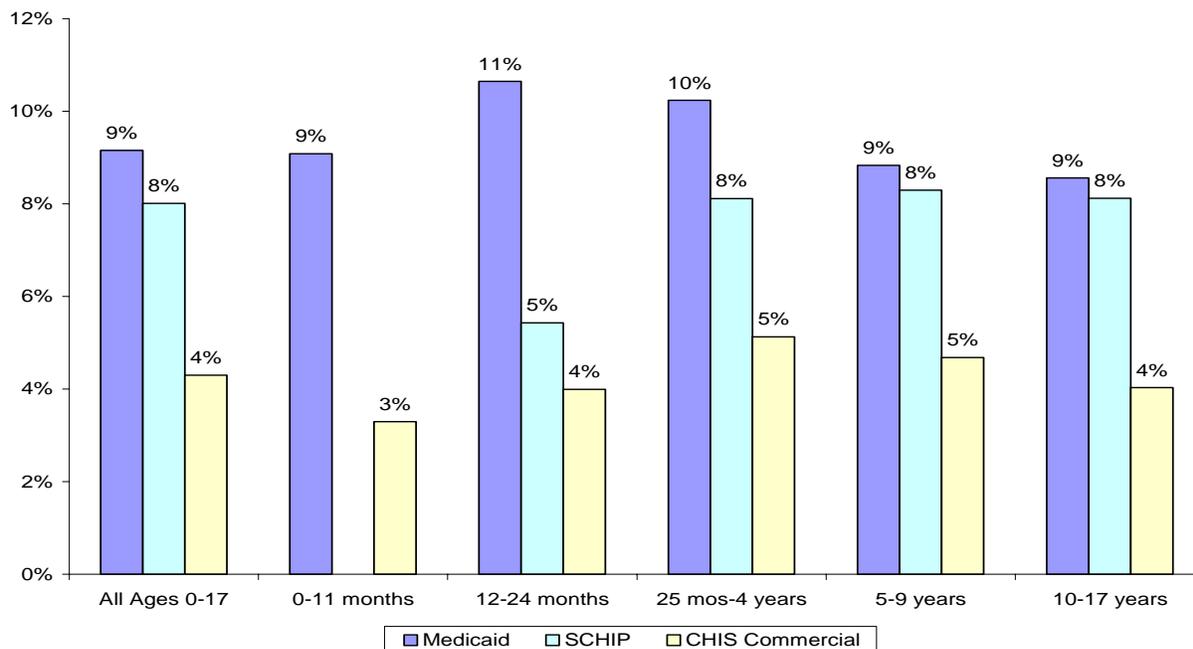
### Asthma

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>34</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 6 and Table 12 provide asthma prevalence and use of appropriate medication rates. For continuously enrolled children, the prevalence rate of asthma in Medicaid (9.2%) was double the NH CHIS commercial rate (4.3%) and higher than the rate for SCHIP (8.0%). For Medicaid, 4,513 children with continuous enrollment were identified with asthma.

**Figure 6. Prevalence of Asthma by Age and Plan Type, SFY2008**

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



About one in four (1,144) of the children enrolled in Medicaid identified with asthma met the strict HEDIS criteria for continuous enrollment and persistent asthma; 772 children in

CHIS commercial and only 57 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, 91.0% of children in Medicaid and 94.6% of the children in CHIS commercial identified with “persistent” asthma used appropriate controller medications. The rate was similar in SCHIP (93.0%) but the difference was not statistically significant due to the small number of children in SCHIP that met the HEDIS criteria. Combining 3-years of SCHIP data, to improve statistical reliability, yielded a rate of 91.5%, which was still not statistically different from the Medicaid or CHIS commercial rates.

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

**Table 12. Prevalence of Asthma, Persistent Asthma, and Use of Appropriate Medications to Control Asthma Among Children by Plan Type, SFY2008**

| 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   | 9.2% (4,513)     | 8.0% (302)         | 4.3% (3,463)       |
| 0–11 months  | 9.1% (106)       | NA                 | 3.3% (16)          |
| 12–24 months   | 10.6% (734)      | 5.4% (12)          | 4.0% (271)         |
| 25 mos–4 years   | 10.2% (631)      | 8.1% (34)          | 5.1% (390)         |
| 5–9 years  | 8.8% 1,300)      | 8.3% (92)          | 4.7% (997)         |
| 10–17 years  | 8.6% 1,742)      | 8.1% (164)         | 4.0% (1,789)       |
| <b>Children identified with “persistent” asthma using HEDIS criteria</b>             |                  |                    |                    |
| All Ages   | 1,144            | 57                 | 772                |
| 0–11 months  | NA               | NA                 | NA                 |
| 12–24 months   | 65               | 0                  | 25                 |
| 25 mos–4 years   | 121              | 6                  | 84                 |
| 5–9 years  | 388              | 19                 | 256                |
| 10–17 years  | 570              | 32                 | 407                |
| <b>Use of Appropriate Medications for Children with “persistent” asthma (95% CI)</b> |                  |                    |                    |
| All Ages   | 91.0%(89.3-92.7) | 93.0%(85.5-100.0)* | 94.6%(92.9-96.2)   |
| 0–11 months  | NA               | NA                 | NA                 |
| 12–24 months   | 92.3%(85.1-99.6) | NSD                | 92.0%(79.4-100.0)  |
| 25 mos–4 years   | 91.7%(86.4-97.1) | NSD                | 92.9%(86.8-99.0)   |
| 5–9 years  | 92.8%(90.1-95.5) | NSD*               | 97.7%(95.6-99.7)   |
| 10–17 years  | 89.5%(86.9-92.1) | NSD*               | 93.1%(90.5-95.7)   |
| <b>National 2008 NCQA Managed Care Plan HEDIS Reporting Year</b>                     |                  |                    |                    |
| <b>Age Group</b>   | <b>Medicaid</b>  | <b>Commercial</b>  |                    |
| 5–9 years  | 89.3%            | 97.1%              |                    |
| 10–17 years  | 86.9%            | 93.8%              |                    |

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. Combining SCHIP data for 3-year period (SFY2006, SFY2007, and SFY2008) to improve statistical reliability resulted in a rate of 91.5% (86.4-96.7) for all ages; 93.5% (85.2-100.0) ages 5-9 years; and, 89.5% (81.9-97.0) ages 10-17.

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

## 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 CHIS data are provided in Table 13. Based on NH CHIS claims data, the rate of appropriate strep testing for children with pharyngitis was higher for SCHIP (83.3%) and NH CHIS commercial (83.0%) than Medicaid (76.9%). The difference between the NH CHIS rate and the Medicaid rate was statistically significant.

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 13. Percent of Continuously Enrolled Children with Appropriate Testing for Pharyngitis by Plan Type, SFY2008**

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)                                  | 1,917             | 144               | 2,352              |
| 2–18 years  | 76.9% (75.0-78.9) | 83.3% (76.9-89.8) | 83.0% (81.5-84.6)  |
| National 2008 NCQA Managed Care Plan HEDIS Reporting Year |                   |                   |                    |
| Age Group   | Medicaid          | Commercial        |                    |
| 2–18 years  | 58.2%             | 74.7%             |                    |

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 14. Based on NH CHIS claims data, the rates of appropriate medication (antibiotic not dispensed) for Medicaid (90.4%), SCHIP (89.4%), and CHIS commercial (89.3%) were not significantly different.

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 14. Percent of Children with Upper Respiratory Infection (URI) Not Dispensed an Antibiotic, SFY2008**

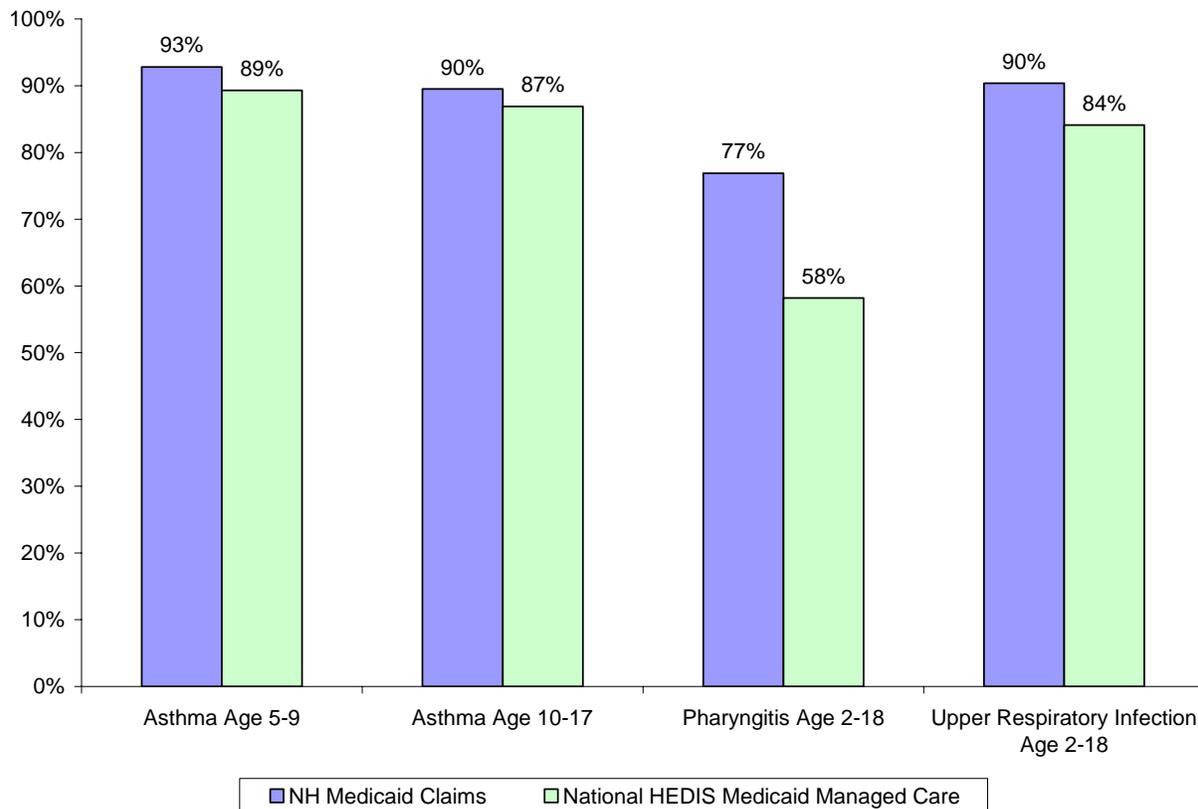
Note: 95% confidence intervals (CI) in parentheses

| Measurement Based on NH CHIS Administrative Claims Data   |                   |                   |                    |
|---|-------------------|-------------------|--------------------|
| Age Group   | Medicaid          | SCHIP             | NH CHIS Commercial |
| 2–18 years (denominator)                                  | 4,303             | 254               | 3,844              |
| 2–18 years  | 90.4% (89.5-91.3) | 89.4% (85.4-93.4) | 89.3% (88.3-90.3)  |
| National 2008 NCQA Managed Care Plan HEDIS Reporting Year |                   |                   |                    |
| Age Group   | Medicaid          | Commercial        |                    |
| 2–18 years  | 84.1%             | 83.5%             |                    |

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

Figure 7 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 7. Comparison of Appropriate Medication for Children Enrolled in Medicaid. SFY2008 New Hampshire Medicaid Claims and NCQA 2008 National HEDIS Rates.**



Trends for the 3-year period SFY2006-SFY2008 in effectiveness of care measures were evaluated. The prevalence of asthma and asthma medication management did not change significantly during the period and national rates, based on NCQA HEDIS did not change significantly (increased by 1%).

Nationally, NCQA HEDIS data indicate that the percent of children with appropriate testing for pharyngitis increased by 6% for Medicaid managed care and 5% for commercial managed care over the 3-year period and the NH Medicaid, SCHIP, and CHIS commercial showed similar rates of increase during the 3-year period SFY2006-SFY2008.

Nationally, NCQA HEDIS data indicate that the percent of children with upper respiratory infection (URI) not dispensed an antibiotic increased by 1% for Medicaid and commercial managed care and a similar rate of increase was found for NH Medicaid, SCHIP, and CHIS commercial during the 3-year period SFY2006-SFY2008.

## Prevalence and Utilization for Mental Health Disorders

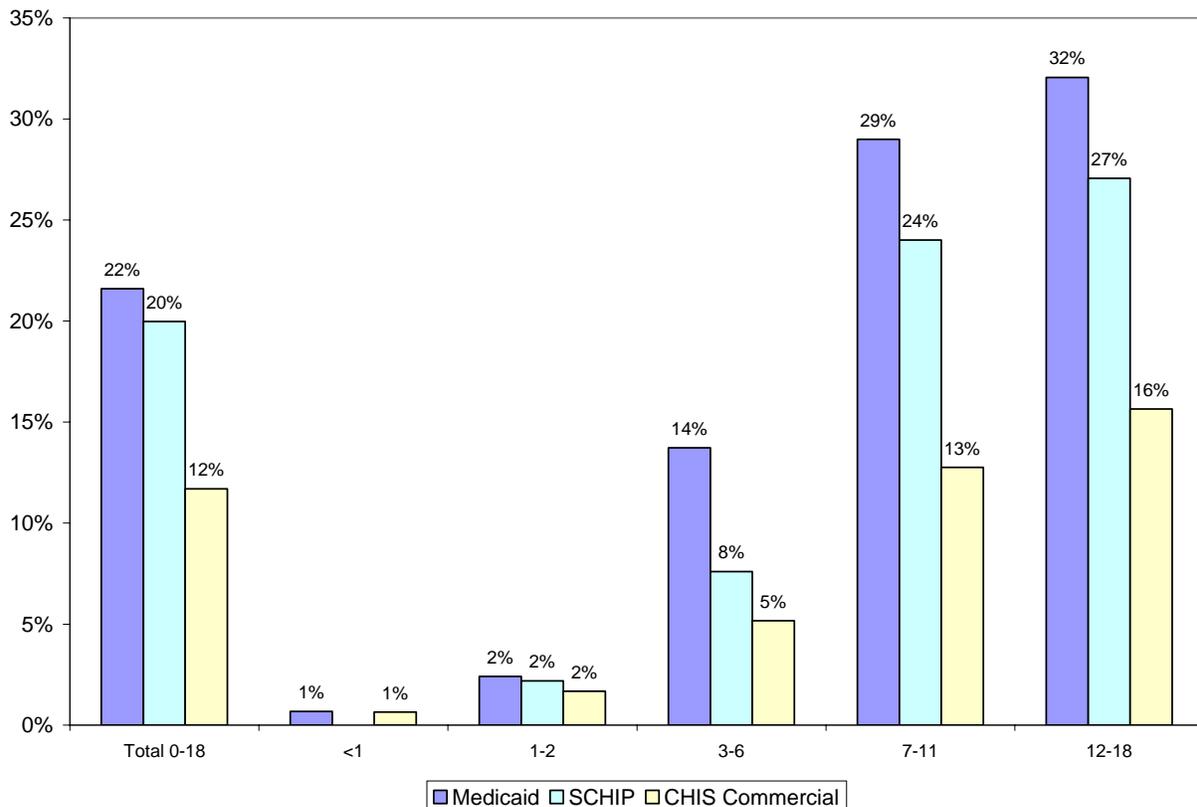
For the NH CHIS report, determination of mental health disorder was based on the diagnostic information contained in the administrative medical claims data (diagnostic codes and groupings are identified in Appendix 1 and were derived from a report prepared for the national Substance Abuse and Mental Health Services Administration (SAMHSA)). Nationally, about 20% of children are estimated to have mental health disorders with at least mild functional impairment.<sup>35</sup>

### Prevalence

Figure 8 and Table 15 summarize the prevalence of mental health disorders by age group and plan type. Among children enrolled during SFY2008 age 0–18, the mental health disorder prevalence rate for children enrolled in Medicaid (21.6%) was similar to the prevalence rate for SCHIP (20.0%) and higher than the rate for NH CHIS commercial (11.7%).

**Figure 8. Prevalence of Mental Health Disorders by Age and Plan Type, SFY2008**

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 covered by Medicaid in the 3–6, 7–11, and 12–18 age groups, the prevalence rate of mental health disorder was more than twice the prevalence rate for children covered by NH CHIS commercial. 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 15. Prevalence of a Mental Health Disorder by Plan Type and Age Group, SFY2008**

| Age Group          | Medicaid      | SCHIP         | NH CHIS Commercial |
|--------------------|---------------|---------------|--------------------|
| Total              | 21.6%(14,602) | 20.0% (1,492) | 11.7% (14,381)     |
| <1 (0–11 mos)      | 0.7% (25)     | NA            | 0.6% (17)          |
| 1–2 (12–35 mos)    | 2.4% (212)    | 2.2% (14)     | 1.7% (160)         |
| 3–6 (36 mos–6 yrs) | 13.7% (2,086) | 7.6% (119)    | 5.2% (1,108)       |
| 7–11               | 29.0% (5,070) | 24.0% (509)   | 12.8% (3,927)      |
| 12–18              | 32.1% (7,209) | 27.1% (850)   | 15.6% (9,169)      |

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

Table 16 provides detailed prevalence rates for serious and other mental health disorder diagnoses by plan type. Among children enrolled in Medicaid, 2,615 had a serious mental health disorder identified. These included 707 children with major depression and 1,343 children with bipolar and other affective psychoses. The prevalence rate of serious mental health disorders in children enrolled in Medicaid (3.9%) was higher than SCHIP (3.3%) and CHIS commercial (2.2%).

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 (8.5%) and SCHIP (9.1%) was higher than for children enrolled in NH CHIS commercial (4.6%).

Stress and adjustment disorders were also common in these children. The prevalence rate for stress and adjustment disorders in Medicaid (7.4%) was about 1.4 times the prevalence rate in SCHIP (5.3%) and 2.6 times the prevalence rate in the NH CHIS commercial children (2.9%). 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>36</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>37</sup> Mental health conditions are particularly common for low-income children.<sup>38</sup>

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\* 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 16. Prevalence of Mental Health Disorders by Plan Type and Diagnostic Category, SFY2008**

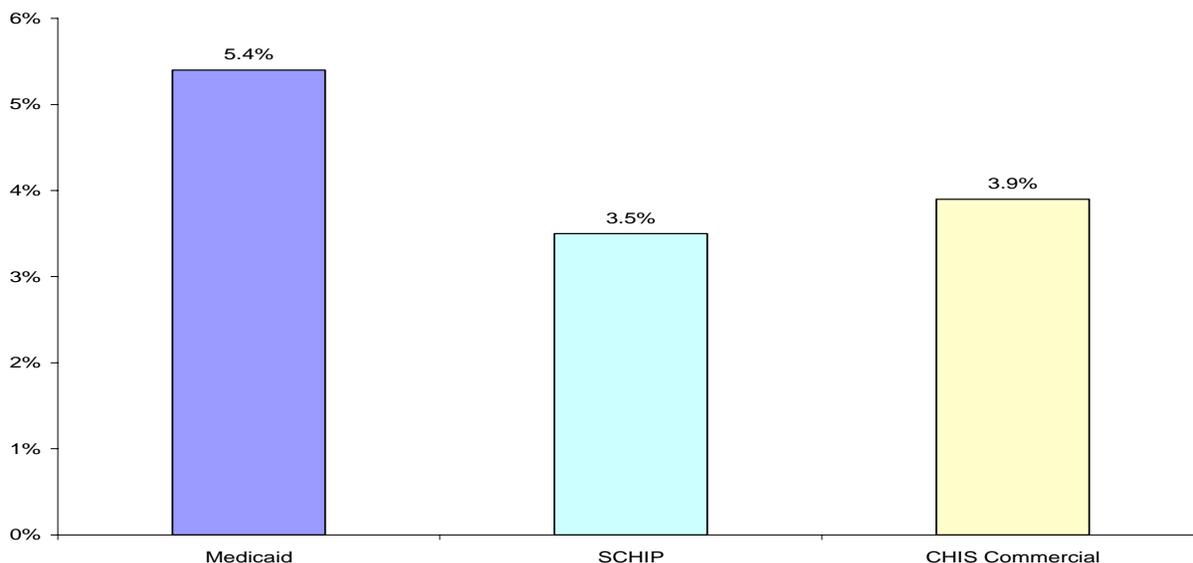
*Note: Categories are not mutually exclusive. The same child may be reported in more than one diagnostic group if the child had claims with different mental health disorder diagnoses during the year. Numbers will not add to total.*

| Mental Health Disorder Cohort             | Medicaid       | SCHIP         | CHIS Commercial |
|---|----------------|---------------|-----------------|
| <b>Any Mental Health Disorder</b>         | 21.6% (14,602) | 20.0% (1,492) | 11.7% (14,381)  |
| <b>Any Serious Mental Health Disorder</b> | 3.9% (2,615)   | 3.3% (248)    | 2.2% (2,710)    |
| Schizophrenic Disorders                   | 0.1% (34)      | 0.0% (0)      | 0.0% (25)       |
| Major Depression                          | 1.0% (707)     | 1.2% (88)     | 0.9% (1,095)    |
| Bipolar & Other Affective Psychoses       | 2.0% (1,343)   | 1.3% (100)    | 0.8% (976)      |
| Other Psychoses                           | 1.2% (806)     | 1.1% (80)     | 0.8% (962)      |
| <b>Any Other Mental Health Disorder</b>   | 20.4% (13,792) | 18.8% (1,404) | 10.9%(13,446)   |
| Stress & Adjustment                       | 7.4% (4,985)   | 5.3% (393)    | 2.9% (3,541)    |
| Personality Disorder                      | 0.2% (145)     | 0.1% (8)      | 0.1% (99)       |
| Disturbance of Conduct                    | 2.7% (1,840)   | 1.6% (119)    | 0.8% (987)      |
| Disturbance of Emotions                   | 2.8% (1,888)   | 1.9% (140)    | 0.8% (964)      |
| ADHD Hyperkinetic                         | 8.5% (5,752)   | 9.1% (677)    | 4.6% (5,607)    |
| Neurotic Disorder                         | 4.3% (2,890)   | 4.9% (364)    | 3.3% (4,007)    |
| Depression NEC                            | 2.4% (1,654)   | 2.3% (172)    | 1.5% (1,813)    |
| Other Mental Health Disorders             | 1.5% (989)     | 1.3% (99)     | 1.1% (1,395)    |

A detailed NH CHIS study of mental health disorders among children in New Hampshire health insurance programs determined the prevalence of comorbid substance abuse among children with a mental health disorder, and results are provided in Figure 8.<sup>39</sup> The prevalence of comorbid substance abuse problems for children with a mental health disorder was higher in Medicaid (5.4%) than SCHIP (3.5%) or CHIS commercial (3.9%). Administrative claims data may under-report the actual prevalence of substance problems.

**Figure 8. Prevalence of Substance Abuse Among Adolescent Children with a Mental Health Disorder by Plan Type, SFY2008**

*Note: Administrative claims data may under-report the actual prevalence of substance problems. Substance problems identified based on SAMHSA ICD-9-CM diagnosis code list. Tobacco abuse excluded.*



## Utilization Rates

Table 17 and Figures 9 and 10 provide summary mental health service utilization rates by plan type for children with mental health disorders. Among children with mental health disorders, inpatient day rates for a mental health disorder were highest in Medicaid (307 per 1,000 members) and lower in SCHIP (94 per 1,000 members) and NH CHIS commercial (246 per 1,000 members). Among children with mental health disorders, outpatient emergency department use rates for a mental health disorder were highest in Medicaid (183 per 1,000 members) and lower in SCHIP (122 per 1,000 members) and CHIS commercial (116 per 1,000 members).

For this report, mental health specialist visits were analyzed and stratified into three distinct categories. This reflects the fact that Medicaid covers some mental health specialist services (e.g., community mental health support, case management, crises intervention), which are unique to Medicaid (i.e., either not covered or rare in the other plans). Medicaid children incurred 20,267 psychotherapy visits, 6,034 diagnostic evaluation, medication management, and testing services, and 17,738 community mental health support, case management, and crises intervention services.

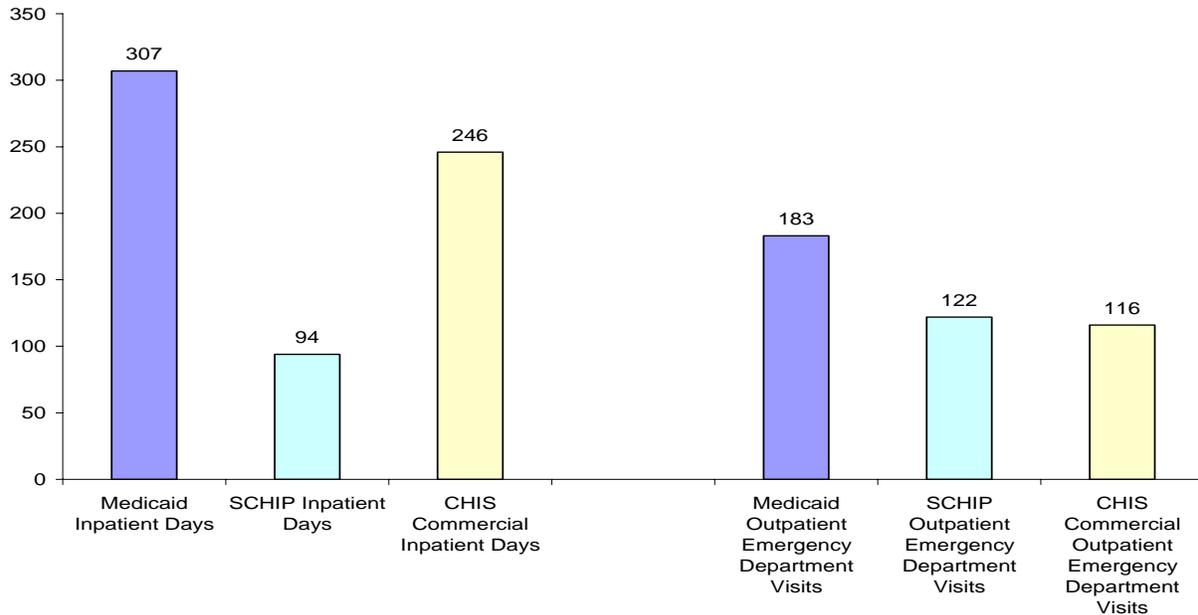
The rate of psychotherapy visits for children with a mental health disorder was highest in Medicaid (5,875 per 1,000 members), lower in SCHIP (4,523 per 1,000), and lowest in CHIS commercial (3,672 per 1,000). Rates of mental health office visits to non-specialists (i.e., primary care practitioners) were higher in Medicaid (1,426 per 1,000 members) compared with CHIS commercial (1,114 per 1,000).

**Table 17. Utilization for Children with Any Mental Health Disorder by Plan Type, SFY2008**

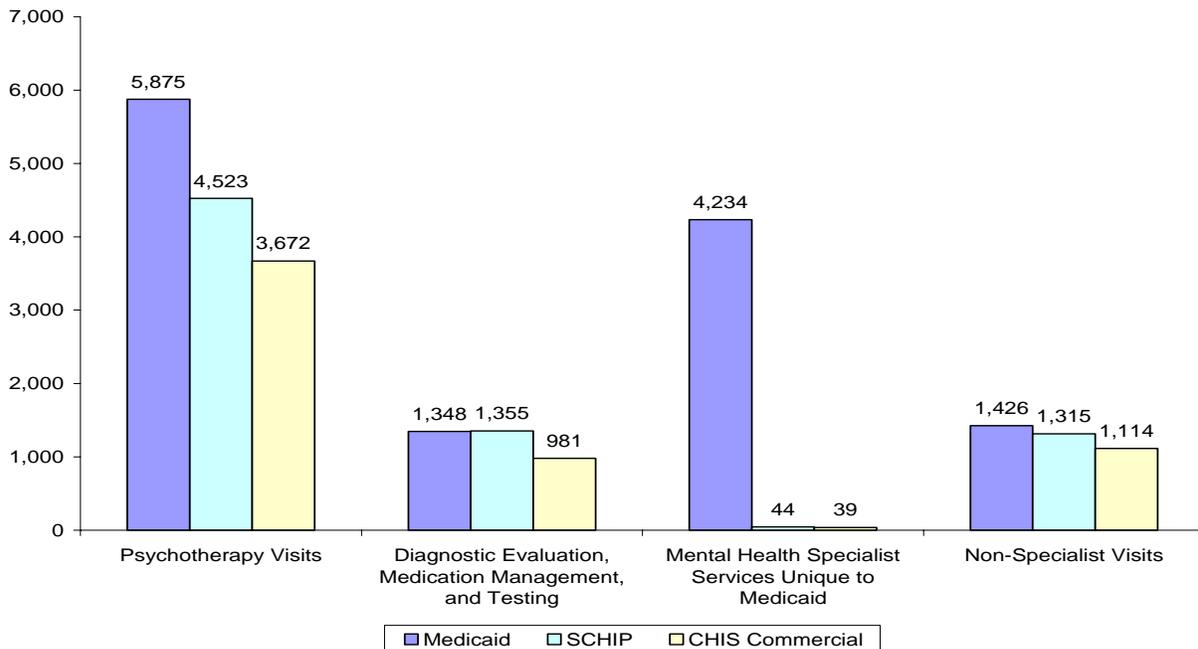
|   | Medicaid       | SCHIP         | NH CHIS Commercial |
|---|----------------|---------------|--------------------|
| Members with Mental Health Disorder                           | 14,602         | 1,492         | 14,381             |
| Average Members (Member Months / 12)                          | 13,306         | 1,065         | 12,674             |
| <b>Utilization Rates per 1,000 (number of visits)</b>         |                |               |                    |
| Members With Mental Health Disorder Admission                 | 33 (437)       | 17 (18)       | 24 (301)           |
| Mental Health Disorder Inpatient Days                         | 307 (4,081)    | 94 (100)      | 246 (3,115)        |
| Mental Health Disorder Outpatient Emergency Department Visits | 183 (2,432)    | 122 (130)     | 116 (1,467)        |
| Mental Health Disorder Office Visits (non-specialist)*        | 1,426 (18,975) | 1,315 (1,400) | 1,114 (14,122)     |
| Mental Health Disorder Specialist Services                    |                |               |                    |
| 1) Psychotherapy  | 5,875 (78,178) | 4,523 (4,816) | 3,672 (46,543)     |
| 2) Diagnostic Evaluation, Medication Management, and Testing  | 1,348 (17,941) | 1,355 (1,443) | 981 (12,430)       |
| 3) Mental Specialist Services Unique to Medicaid              | 4,234 (56,341) | 44 (47)       | 39 (499)           |

\*The NH Medicaid benefit limit for psychotherapy is 12 visits per year for ARNPs and other non-physician providers.

**Figure 9. 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, SFY2008**



**Figure 10. Mental Health Specialist and Non-Specialist Office/Clinic Visit Rates per 1,000 Members with a Mental Health Disorder by Plan Type, SFY2008**



Children enrolled in Medicaid were more likely to have a serious mental disorder than children in SCHIP or CHIS commercial. The higher rate of serious mental disorders might influence the higher use rate for Medicaid. Table 18 provides a summary of utilization by plan type for only the children with a serious mental disorder during SFY2008. Children in Medicaid with a serious mental disorder had higher utilization rates than children in CHIS commercial in every category. SCHIP children with serious mental disorder had lower inpatient utilization rates. Coexisting substance abuse did not influence the rate differences.

**Table 18. Utilization for Children with a Serious Mental Health Disorder by Plan Type, SFY2008**

|   | Medicaid       | SCHIP         | NH CHIS Commercial |
|---|----------------|---------------|--------------------|
| Members with Mental Health Disorder                           | 2,615          | 248           | 2,710              |
| Average Members (Member Months / 12)                          | 2,398          | 177           | 2,375              |
| <b>Utilization Rates per 1,000 (number of visits)</b>         |                |               |                    |
| Members With Mental Health Disorder Admission                 | 128 (306)      | 79 (14)       | 94 (224)           |
| Mental Health Disorder Inpatient Days                         | 1,396 (3,348)  | 412 (73)      | 1,119 (2,658)      |
| Mental Health Disorder Outpatient Emergency Department Visits | 518 (1,243)    | 299 (53)      | 303 (720)          |
| Mental Health Disorder Office Visits (non-specialist)*        | 2,059 (4,937)  | 1,321 (234)   | 1,079 (2,563)      |
| Mental Health Disorder Specialist Services                    |                |               |                    |
| 1) Psychotherapy  | 8,452 (20,267) | 7,409 (1,312) | 6,536 (15,525)     |
| 2) Diagnostic Evaluation, Medication Management, and Testing  | 2,516 (6,034)  | 2,643 (468)   | 1,998 (4,746)      |
| 3) Mental Specialist Services Unique to Medicaid              | 7,397 (17,738) | 181 (32)      | 159 (378)          |

\*The NH Medicaid benefit limit for psychotherapy is 12 visits per year for ARNPs and other non-physician providers.

### *Psychotropic Medication Utilization*

For all children enrolled in Medicaid and SCHIP, pharmacy claims data were available. Not all children enrolled in CHIS commercial have pharmacy claims data 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, the CHIS commercial population was limited to children with a mental health disorder who had pharmacy data linked (67% of the children with a mental health disorder).

Table 19 summarizes the prevalence of psychotropic medication use by plan and age for children with a mental health disorder. Among 14,602 Medicaid members (13,306 average members) with a mental health disorder, 7,542 had any psychotropic medication use, a prevalence rate of 57%. Among children with a mental health disorder, the prevalence of children using a psychotropic medication was slightly lower in Medicaid (57%) than CHIS commercial (61%). The SCHIP rate (76%) was higher and may be influenced by the member month denominator used for this measure.\*

\* 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: Medicaid (52%), SCHIP (54%), and CHIS commercial (53%). 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.

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 (67%).

**Table 19. Prevalence of Any Use of Psychotropic Medication for Children with a Mental Health Disorder by Age and Plan Type, SFY2008**

| Age Group          | Medicaid    | SCHIP     | NH CHIS Commercial |
|--------------------|-------------|-----------|--------------------|
| Total All Ages     | 57% (7,542) | 76% (806) | 61% (5,157)        |
| <1 (0–11 mos)      | 22% (4)     | NA        | 0% (0)             |
| 1–2 (12–35 mos)    | 9% (18)     | 11% (1)   | 2% (02)            |
| 3–6 (36 mos–6 yrs) | 25% (485)   | 26% (23)  | 19% (123)          |
| 7–11               | 58% (2,715) | 77% (272) | 56% (1,320)        |
| 12–18              | 67% (4,320) | 83% (510) | 70% (3,712)        |

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. SCHIP is a transitional program. If unique members were used as denominator, the rates for Medicaid (52%), SCHIP (54%), and CHIS commercial (53%) were similar. CHIS Commercial is based on subset of children (67%) for which pharmacy data could be linked.

Table 20 summarizes the prevalence of any use of psychotropic medications among children with a mental health disorder by medication type. Among 14,602 children enrolled in Medicaid with a mental health disorder, 21% used an antidepressant and 35% used a stimulant during the year.

Among children with a mental health disorder using psychotropic medication, Medicaid children average more use (307 days per year) compared to SCHIP (216 days per year) or CHIS commercial (249 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.

**Table 20. Prevalence of Any Use of Psychotropic Medication for Children with a Mental Health Disorder by Drug Type and Plan Type, SFY2008**

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.

| Psychotropic Drug Category                      | Medicaid    | SCHIP     | NH CHIS Commercial |
|---|-------------|-----------|--------------------|
| Total All Types                                 | 57% (7,542) | 76% (806) | 61% (5,157)        |
| Antidepressants                                 | 21% (2,797) | 28% (293) | 27% (2,303)        |
| Tranquilizers                                   | 13% (1,688) | 10% (105) | 8% (660)           |
| Stimulants                                      | 35% (4,599) | 49% (518) | 35% (2,943)        |
| Anxiolytics                                     | 6% (752)    | 6% (67)   | 7% (569)           |
| Other CNS Agents                                | 10% (1,273) | 10% (105) | 8% (711)           |
| Average days supplied per member using per year | 307         | 216       | 249                |

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 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™.

Trends in prevalence and utilization rates were evaluated. There was no significant change in the prevalence rates of mental health disorders for NH Medicaid, SCHIP, or CHIS commercial between SFY2006 and SFY2008. However, based on the administrative claims diagnoses, Medicaid covered 143 more children with serious mental health disorders and 768 more children with other mental health disorders in SFY2008 compared to SFY2006.

### *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. Three factors that might have contributed to this difference are described below.

1) 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.

2) 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>40</sup> Foster care children enrolled in Medicaid utilize mental health services at higher rates than other children in Medicaid.<sup>41</sup> A NH CHIS study of Medicaid children in out-of-home placement (residential and foster care home) was recently completed and results indicated that 90% of adolescent children in residential placement and 82% in foster home care had a mental health disorder compared with 28% of other low-income children enrolled in NH Medicaid.<sup>42</sup>

3) 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. These factors may contribute to the differences in psychotherapy and other utilization measures reported here.

## 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 11 and Table 21. Medicaid rates were consistently higher than NH CHIS commercial rates; overall 97.4 per 1,000 Medicaid members compared to 19.8 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), who are not covered in SCHIP, and in the case of infants may not be fully available in commercial data due to bundling of the baby's claim with the mother.

Excluding newborns and infants (age 0–11 months), and standardizing for difference in health status (CRG) and age the inpatient hospitalization rate for Medicaid (23.3 per 1,000 members) was significantly higher than the SCHIP rate (16.6 per 1,000 members) or the NH CHIS commercial rate (15.8 per 1,000 members).

Excluding newborns and infants (age 0-11 months), the Medicaid rate decreased by 3% and CHIS commercial increased by 8% compared to SFY2007. Numbers were too small to evaluate trends for SCHIP.

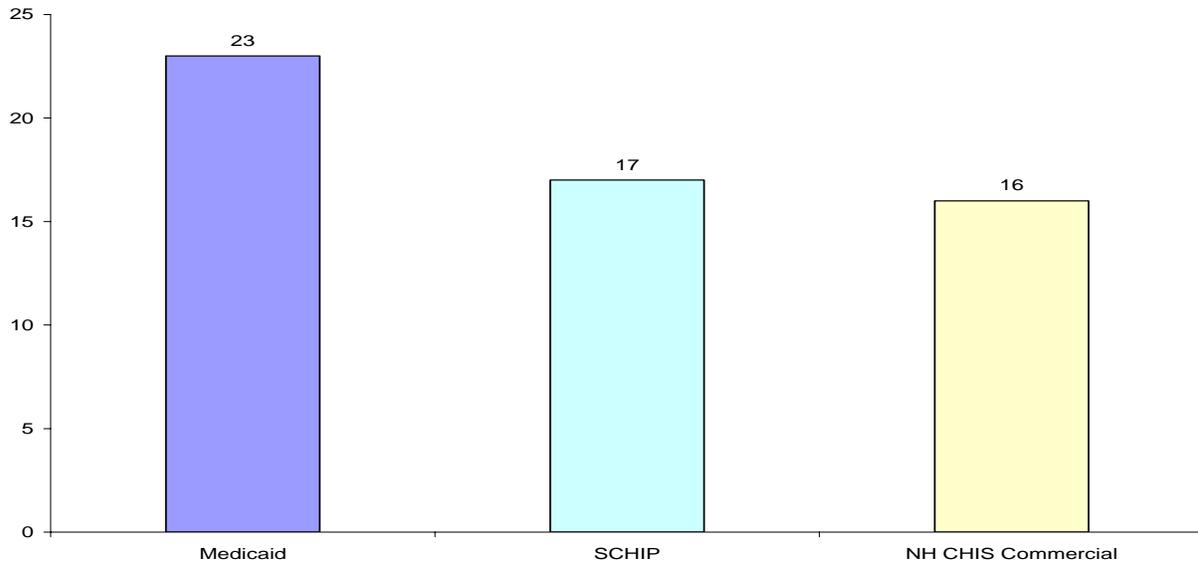
**Table 21. Inpatient Hospitalization Rates Per 1,000 Members by Age and Plan, SFY2008**

| Age Group  | Medicaid         | SCHIP            | NH CHIS Commercial |
|--|------------------|------------------|--------------------|
| Total, Age 0–18  | 97.4 (6,584)     | 13.3 (99)        | 19.8 (2,432)       |
| Total excluding age 0–11 mos   | 29.2 (1,869)     | 13.3 (99)        | 13.8 (1,659)       |
| <1 (0–11 mos)  | 1,286.6 (4,715)  | NA               | 294.9 (773)        |
| 1–2 (12–35 mos)  | 40.9 (359)       | 17.2 (11)        | 24.5 (234)         |
| 3–6 (36 mos–6 yrs)   | 16.3 (247)       | 10.2 (16)        | 9.7 (207)          |
| 7–11   | 14.5 (253)       | 7.5 (16)         | 7.6 (234)          |
| 12–18  | 44.9 (1,010)     | 17.8 (56)        | 16.8 (984)         |
| Inpatient rate standardized for CRG risk group and age, excluding age 0-11 mos (95% confidence interval) | 23.3 (22.3,24.4) | 16.6 (13.5,20.2) | 15.8 (15.1,16.6)   |

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.

**Figure 11. Inpatient Standardized Utilization Rates per 1,000 Members Age 1–18 Years, SFY2008**

*Note: Infants under 1 are not included. Inpatient rate is standardized for population in health status (based on CRG) and age.*



Previous studies have identified certain hospitalizations as potentially preventable or avoidable; these are sometimes referred to as Ambulatory Care Sensitive (ACS) conditions.<sup>43,44</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 disease.

For five selected ACS conditions (asthma, dehydration, bacterial pneumonia, urinary tract infections, and gastroenteritis) the inpatient hospitalization rate for children enrolled in Medicaid (4.7 per 1,000 members) was higher than the SCHIP rate (1.9 per 1,000 members) and almost triple the rate for NH CHIS commercial (1.7 per 1,000 members). Detailed rates for the inpatient ACS conditions are provided in Table 22. The rate of inpatient ACS hospitalizations for Medicaid increased by 5% between SFY2006 and SFY2007 and by 6% between SFY2007 and SFY2008, although the numbers are too small for these trends to be statistically significant. CHIS commercial rates remained unchanged and SCHIP trends cannot be evaluated due to small numbers.

**Table 22. Ambulatory Care Sensitive (ACS) Condition Inpatient Hospitalization Rates per 1,000 Members by Plan, SFY2008**

| ACS Condition           | Medicaid  | SCHIP    | NH CHIS Commercial |
|-------------------------|-----------|----------|--------------------|
| Total                   | 4.7 (317) | 1.9 (14) | 1.7 (215)          |
| Asthma                  | 1.4 (95)  | 0.0 (0)  | 0.3 (34)           |
| Dehydration             | 1.0 (66)  | 0.9 (7)  | 0.6 (71)           |
| Bacterial Pneumonia     | 1.6 (107) | 0.7 (5)  | 0.3 (37)           |
| Urinary Tract Infection | 0.6 (42)  | 0.1 (1)  | 0.5 (65)           |
| Gastroenteritis         | 0.1 (7)   | 0.1 (1)  | 0.1 (8)            |

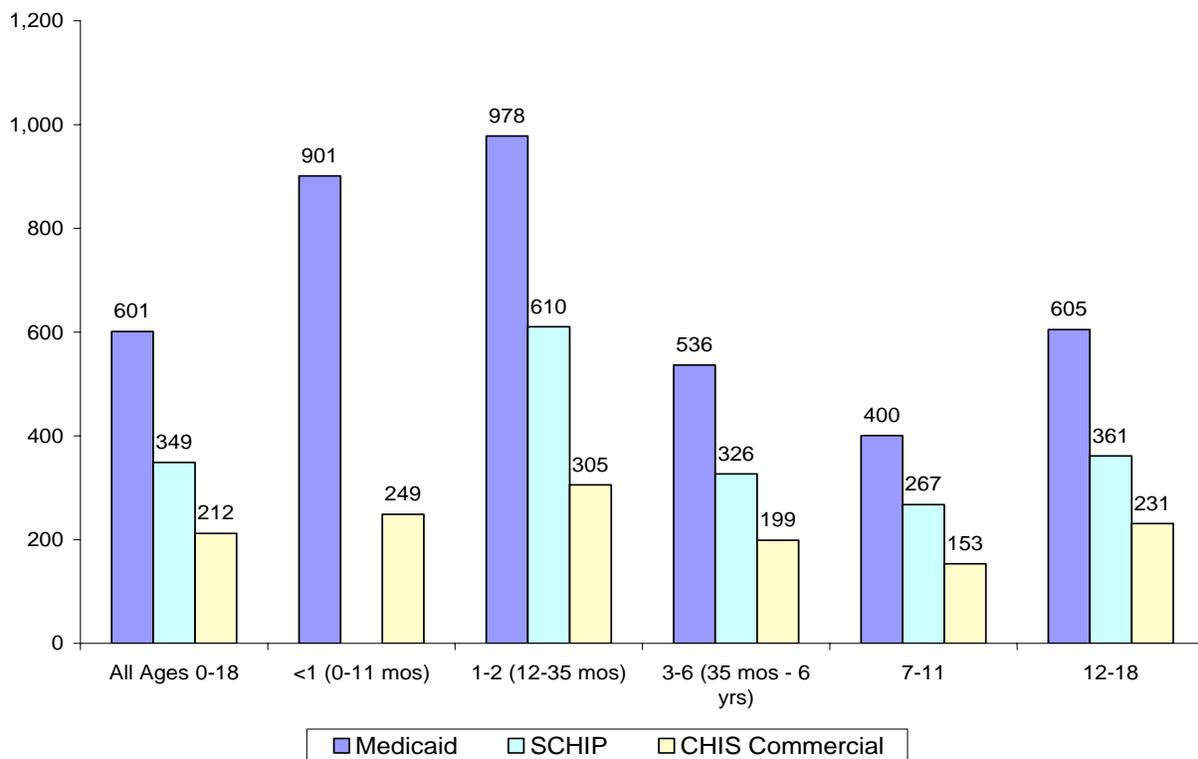
Because ACS hospitalizations may be preventable or avoidable, the payment (plan payments and member responsibility) was determined from the claims data. The 317 Medicaid hospitalizations were \$769,914 (average \$2,429); the 14 SCHIP hospitalizations were \$38,398 (average \$2,743); and the 215 NH CHIS commercial hospitalizations were \$1,281,879 (average \$5,962). 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 12 and 13 and Table 23. 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 40,645 outpatient emergency department visits. Excluding newborns and infants (age 0–11 months), and standardizing for difference in health status (CRG) and age, the outpatient emergency department rate for Medicaid (519 per 1,000) was significantly higher than SCHIP (369 per 1,000) or CHIS commercial (227 per 1,000). The rates were similar to rates for SFY2006 and SFY2007, with slight increases in each of the plan types.

**Figure 12. Outpatient Emergency Department Visit Rates per 1,000 Members by Age, SFY2008**



Rates of office/clinic visits were higher in Medicaid (3,817 per 1,000) compared to SCHIP (3,246 per 1,000) and NH CHIS commercial (2,880 per 1,000). Excluding newborns and infants (age 0–11 months) and standardized for differences in health status (CRG) and age, the office-clinic visit rate was highest in SCHIP (3,394 per 1,000) and lower in Medicaid (3,060 per 1,000) and CHIS commercial (2,995 per 1,000). These rates were similar to rates for SFY2006 and SFY2007 with a very slight increase for Medicaid and no change for CHIS commercial or SCHIP.

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 SFY2008, 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 and SFY2007 results.

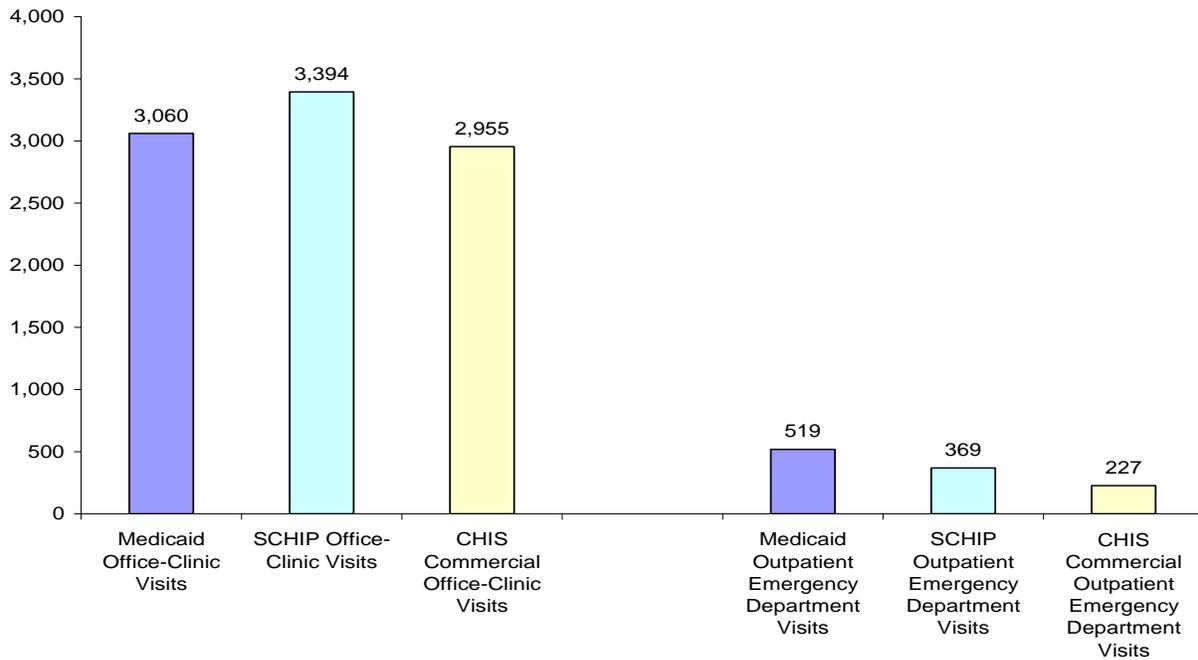
**Table 23. Outpatient Emergency Department and Office/Clinic Visit Rates per 1,000 Members by Age and Plan, SFY2008**

| Age Group  | Medicaid          | SCHIP             | NH CHIS Commercial |
|--|-------------------|-------------------|--------------------|
| <b>Outpatient Emergency Department Visits</b>  |                   |                   |                    |
| Total  | 601 (40,645)      | 349 (2,603)       | 212 (26,081)       |
| <1 (0–11 mos)  | 901 (3,301)       | NA                | 249 (652)          |
| 1–2 (12–35 mos)  | 978 (8,586)       | 610 (390)         | 305 (2,911)        |
| 3–6 (36 mos–6 yrs)   | 536 (8,153)       | 326 (511)         | 199 (4,256)        |
| 7–11   | 400 (7,003)       | 267 (567)         | 153 (4,717)        |
| 12–18  | 605 (13,602)      | 361 (1,135)       | 231 (13,545)       |
| Outpatient Emergency Department rate standardized for CRG risk group and age, excluding age 0-11 mos (95% confidence interval) | 519 (514,524)     | 369 (355,383)     | 227 (224,230)      |
| <b>Office/Clinic Visits</b>  |                   |                   |                    |
| Total  | 3,817 (258,116)   | 3,246 (24,230)    | 2,880 (354,137)    |
| <1 (0–11 mos)  | 10,206 (37,399)   | NA                | 8,975 (23,523)     |
| 1–2 (12–35 mos)  | 6,265 (55,003)    | 5,579 (3,566)     | 5,741 (54,742)     |
| 3–6 (36 mos–6 yrs)   | 3,206 (48,722)    | 3,359 (5,258)     | 2,932 (62,825)     |
| 7–11   | 2,769 (48,428)    | 2,770 (5,872)     | 2,274 (69,986)     |
| 12–18  | 3,049 (68,564)    | 3,035 (9,534)     | 2,441 (143,061)    |
| Office/Clinic rate standardized for CRG risk group and age, excluding age 0-11 mos (95% confidence interval)                   | 3,060 (3047,3073) | 3,394 (3351,3437) | 2,955 (2945,2965)  |

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

**Figure 13. Office-Clinic and Outpatient Emergency Department Standardized Visit Rates per 1,000 Members, SFY2008**

*Note: Infants under 1 are not included. Inpatient rate is standardized for population in health status (based on CRG) and age.*



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>45</sup>

The resulting outpatient emergency department visit rates for these conditions are summarized in Table 24. Children enrolled in Medicaid incurred 16,206 of these visits during SFY2008. 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 (240 per 1,000 members) was higher than SCHIP (114 per 1,000 members) or NH CHIS commercial (58 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.

For these selected conditions, the ratio of emergency department to office/clinic visits for Medicaid (0.20) 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 the same as SFY2006 and SFY2007. 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 24. Outpatient Emergency Department Visit Rates per 1,000 Members for Selected Conditions, SFY2008**

| Selected Diagnostic Group                                 | Medicaid            | SCHIP            | NH CHIS Commercial |
|---|---------------------|------------------|--------------------|
| <b>Total Selected Conditions</b>                          | <b>240 (16,206)</b> | <b>114 (851)</b> | <b>58 (7,150)</b>  |
| Asthma  | 11 (716)            | 7 (52)           | 3 (417)            |
| Dehydration   | 2 (159)             | 1 (07)           | 1 (134)            |
| Bacterial Pneumonia                                       | 8 (562)             | 5 (41)           | 2 (263)            |
| Urinary Tract Infection                                   | 9 (577)             | 4 (31)           | 3 (374)            |
| Gastroenteritis   | 7 (455)             | 3 (23)           | 2 (201)            |
| Sore throat (Strep)                                       | 7 (493)             | 4 (31)           | 2 (228)            |
| Viral Infection (unspecified)                             | 14 (942)            | 4 (29)           | 2 (294)            |
| Anxiety (unspecified or generalized)                      | 1 (91)              | 1 (08)           | 1 (63)             |
| Conjunctivitis (acute or unspecified)                     | 8 (514)             | 3 (26)           | 1 (172)            |
| External and middle ear infections (acute or unspecified) | 56 (3,805)          | 22 (166)         | 11 (1,328)         |
| Upper respiratory infections (acute or unspecified)       | 59 (3,959)          | 21 (154)         | 11 (1,378)         |
| Bronchitis (acute or unspecified) or cough                | 19 (1,260)          | 9 (67)           | 3 (416)            |
| Dermatitis and rash                                       | 15 (1,037)          | 6 (47)           | 3 (328)            |
| Joint pain  | 4 (253)             | 3 (23)           | 2 (196)            |
| Lower and unspecified back pain                           | 2 (153)             | 1 (09)           | 1 (90)             |
| Muscle and soft tissue limb pain                          | 3 (183)             | 2 (15)           | 1 (150)            |
| Fatigue   | 1 (43)              | 1 (05)           | 0 (25)             |
| Headache  | 5 (344)             | 2 (18)           | 2 (236)            |
| Abdominal pain  | 17 (1,141)          | 16 (120)         | 8 (1,037)          |

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 25.

**Table 25. Outpatient Emergency Department and Office-Clinic Visit Payments for Selected Conditions, SFY2008**

| Measure                                | Medicaid    | SCHIP     | NH CHIS Commercial |
|--|-------------|-----------|--------------------|
| <b>Outpatient Emergency Department</b> |             |           |                    |
| Total Outpatient ED Visits             | 16,206      | 851       | 7,150              |
| Total Payments                         | \$1,722,364 | \$210,106 | \$2,393,857        |
| Average Payment per Visit              | \$106       | \$247     | \$335              |
| <b>Office-Clinic</b>                   |             |           |                    |
| Total Office-Clinic Visits             | 80,792      | 8,454     | 116,644            |
| Total Payments                         | \$4,842,764 | \$755,275 | \$11,578,810       |
| Average Payment per Visit              | \$60        | \$89      | \$99               |

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. If Medicaid had reimbursed at the higher rate paid by CHIS commercial plans for these selected conditions, Medicaid would have paid out \$3.7 million more than it did during SFY2008.

Children enrolled in Medicaid incurred \$1.7 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 (\$106) was higher than an office-clinic visit (\$60) for these conditions.

### *Payments per Member per Month*

Total payment rates per member per month (PMPM) by age group and plan type were evaluated. Results are provided in Figure 14 and Table 26. 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 \$204.6 million in payments, SCHIP incurred \$10.6 million in plan payments and \$721,000 in member responsibility, and NH CHIS commercial incurred \$125.0 million in plan payments and \$21.3 million in member responsibility.<sup>\*\*</sup> Not all children enrolled in CHIS commercial plans had pharmacy claims data linked, the evaluation of payments per member per month included only children with both medical and pharmacy claims linked.

Payment differences are influenced by Medicaid lower reimbursement rate per service compared with SCHIP or NH CHIS commercial plans.

**Table 26. Payment Rates per Member per Month (PMPM) by Plan Type, SFY2008**

|   | <b>Medicaid</b> | <b>SCHIP</b> | <b>NH CHIS Commercial with RX Linked</b> |
|---|-----------------|--------------|--|
| Member Months   | 811,379         | 89,586       | 969,335                                  |
| Total Paid (millions)   | \$204.6         | \$11.3       | \$146.4                                  |
| Total Paid PMPM   | \$252           | \$126        | \$151                                    |
| Paid After Exclusions (millions) <sup>*</sup>   | \$127.8         | \$11.3       | \$146.4                                  |
| Paid PMPM after exclusion of infants less than one year of age, and standardized for age and CRG risk group | \$128           | \$145        | \$157                                    |

<sup>\*</sup>Excludes dental claims and services provided by Medicaid for non-medical institutions, school-based special education services, services for the developmental disabled, and services provided through NH Division of Children, Youth, and Families (DCYF).

<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 1,378 children in these disabled eligibility classifications covered by Medicaid excluded from this study. The average monthly cost for these disabled children is approximately 9 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 20% 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 slightly higher than the total of the capitated payments plus any member payments. Prepaid dollar amounts for SYF2008 were below 1%, accounting for 0.1% of SCHIP and 0.3% of CHIS commercial payments.

During SFY2008 the payment rate for Medicaid (\$252 PMPM) was higher than SCHIP (\$126 PMPM) and CHIS commercial (\$151 PMPM), before any standardization or adjustment to make the PMPMs more comparable. These differences in rates are impacted by several factors. SCHIP does not cover infants less than one year of age, the health status (based on CRG) of children enrolled in Medicaid is poorer than children enrolled in SCHIP or CHIS commercial, and Medicaid pays for services (e.g., private non-medical institutions, school-based special education, services for the developmentally disabled, and services through the NH Division of Children, Youth, and Families) typically not covered by commercial plans. Not all children in CHIS commercial plans had dental coverage and dental claims were not available for children in SCHIP at the time of this study. In total, these services represent \$76.8 million (38%) of the \$204.6 million Medicaid payments for children.

Excluding special services specific to Medicaid, newborns and infants (age 0–11 months), and standardizing for differences in health status (CRG) and age, the payment rate for children per member per month (PMPM) was lower in Medicaid (\$128 PMPM) compared with SCHIP (\$145 PMPM) or NH CHIS commercial (\$157 PMPM).

**Figure 14. Unadjusted and Adjusted Payment Rates per Member per Month (PMPM) by Plan Type, SFY2008**

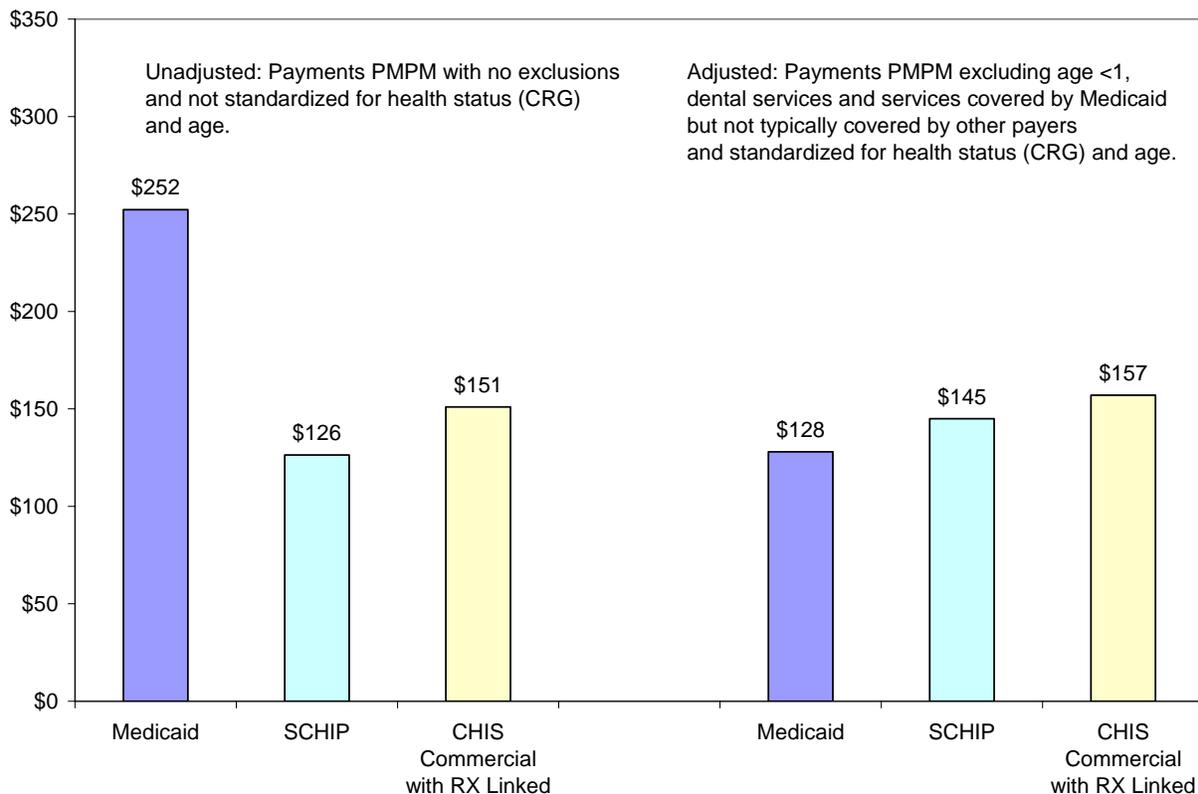


Table 27 provides age-specific payment rates by plan. For Medicaid rates are shown with and without exclusions. Excluding newborn infants, payment rates are highest for adolescents age 12-18 in each plan type. The payment rate PMPM for Medicaid children was

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. A 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.

Unadjusted 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.

**Table 27. Payment Rates per Member per Month (PMPM) by Age and Plan Type, SFY2008**

| Age Group                    | Medicaid | Medicaid After Exclusions | SCHIP | NH CHIS Commercial |
|------------------------------|----------|---------------------------|-------|--------------------|
| Total                        | \$252    | \$158                     | NA    | \$151              |
| Total excluding age 0–11 mos | \$241    | \$142                     | \$126 | \$145              |
| <1 (0–11 mos)                | \$453    | \$432                     | NA    | \$436              |
| 1–2 (12–35 mos)              | \$179    | \$116                     | \$146 | \$181              |
| 3–6 (36 mos–6 yrs)           | \$143    | \$93                      | \$91  | \$123              |
| 7–11                         | \$224    | \$144                     | \$97  | \$108              |
| 12–18                        | \$344    | \$182                     | \$160 | \$167              |

NA: SCHIP does not cover children under the age of one. \*Excludes dental claims and services provided by Medicaid for non-medical institutions, school-based special education services, services for the developmental disabled, and services provided through NH Division of Children, Youth, and Families (DCYF).

A three-year trend analysis of payments PMPM indicated that Medicaid payment PMPM increased by a modest 3% between SFY2006 and SFY2007 and 4% between SFY2007 and SFY2008 while CHIS commercial increased by 8% and 11%. SCHIP trends (+12% and -1%) were inconsistent and small numbers and outliers may impact the results.

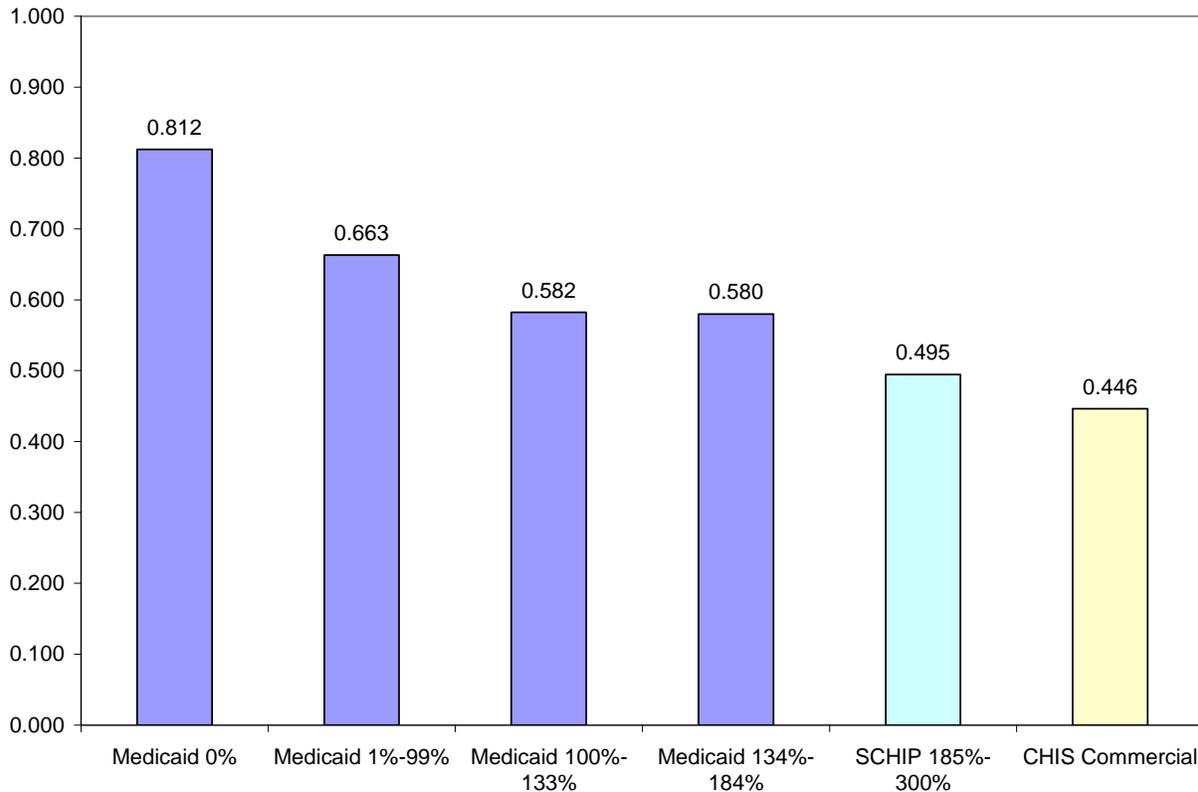
To summarize the results from the utilization and payment section of this report, children enrolled in NH Medicaid use the hospital for inpatient services and outpatient emergency department services at higher rates even when health status and age differences are adjusted for. In contrast, after adjusting for health status and age, children in enrolled in Medicaid are not more likely to have office-clinic visits. Overall, children enrolled in Medicaid incur monthly claim expenses significantly higher than children enrolled in NH CHIS commercial or SCHIP. When adjusted for health status, age, and special services provided by Medicaid, the payment rate is lower for Medicaid.

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## Poverty Level for Children Enrolled in Medicaid

Medicaid enrollment files contain household income level as a percentage of the Federal Poverty Level (FPL).\* SCHIP children are covered at 185% to 300% of FPL. CHIS commercial files do not contain information about household income level. The relative health status (based on CRG risk scores) of children enrolled in Medicaid is provided in Figure 15. Results indicate that Medicaid children with continuous enrollment in the poorest households (0% FPL) had the poorest health as indicated by a higher average clinical risk (CRG) score (0.812) compared with children in households with the highest adjusted household income (134%-184%) average clinical risk score (0.580). For all Medicaid poverty level groups, health status was poorer than for SCHIP or CHIS commercial plan types.

**Figure 15. Health Status (average CRG risk score) by Child's Household Poverty Level, SFY2008. Children with continuous enrollment only.**



Utilization and payment rates were evaluated by the poverty level for children enrolled in Medicaid and the results are provided in Table 28. Results indicate that children enrolled

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\* Federal Poverty Level (FPL) is determined at enrollment by the adjusted income and not the gross income of the household. An FPL of 100% would indicate the children was living at the FPL and 0% would indicate the child was living in a household with no income after adjustments for income disregards.

in Medicaid in the poorest households (0% FPL) had a rate of inpatient hospitalization that was almost twice the rate for children in households with the highest adjusted household income (20 per 1,000).

Children enrolled in Medicaid in the poorest households (0% FPL) had a higher rate of outpatient emergency department visits (626 per 1,000) that was significantly higher than the rate of children in households with the highest adjusted household income (477 per 1,000). Prevalence of frequent emergency department users (4 or more visits during the year) decreased as household income level increased.

In contrast, office-clinic visit rates increased slightly as household income increased. Children enrolled in Medicaid in the poorest households (0% FPL) had a rate of office-clinic visits (3,414 per 1,000) that was lower than the rate for children in households with the highest adjusted household income (3,512 per 1,000). While the relative difference in rate was not large, it did reach statistical significance.

Payments excluded dental and special services provided only by Medicaid. Results indicated that payment rates PMPM declined as household income increased. Children enrolled in Medicaid in the poorest households (0% FPL) had a payment rate (\$167 PMPM) that was 1.5 times higher than the rate for children in households with the highest adjusted household income (\$116 PMPM).

**Table 28. Medicaid Utilization and Payments Comparison by Poverty Level, SFY2008**

*Note: Infants and newborns under one year of age are excluded. All rates are standardized for age and health risk based on CRG groups. Numbers in parenthesis are 95% confidence intervals.*

| Measure  | Poverty Level     |                   |                   |                    |
|--|-------------------|-------------------|-------------------|--------------------|
|  | 0% FPL            | 1%-99% FPL        | 100%-133% FPL     | 134%-184% FPL      |
| Inpatient Hospitalization Rate per 1,000                             | 38 (35,41)        | 30 (28,33)        | 26 (23,29)        | 20 (18,23)         |
| Outpatient Emergency Department Visits per 1,000                     | 676 (661,690)     | 623 (613,633)     | 529 (515,543)     | 477 (466,488)      |
| Prevalence of Frequent Emergency Department Users (4 or more visits) | 3.5% (3.2,3.9)    | 3.0% (2.8,3.2)    | 2.1% (1.9,2.4)    | 1.8% (1.6,2.0)     |
| Office-Clinic Visits per 1,000                                       | 3,414 (3383,3446) | 3,430 (3407,3453) | 3,447 (3411,3482) | 3,512 (3483,3,542) |
| Payments PMPM after exclusions*                                      | \$167             | \$148             | \$127             | \$116              |

\*Excludes dental claims and services provided by Medicaid for non-medical institutions, school-based special education services, services for the developmental disabled, and services provided through NH Division of Children, Youth, and Families (DCYF).

Results of the analysis indicate a consistent pattern of association between poverty, poor health status and higher utilization and payments.

## DISCUSSION AND NEXT STEPS

This study evaluated a wide variety of health care measures (enrollment and disenrollment, health status, access to primary care, well-child visits, effectiveness of care management, prevalence and utilization for mental health disorders, utilization and payments) for New Hampshire children with Medicaid, SCHIP, and CHIS commercial insurance during SFY2008 using administrative eligibility and claims data. The study is part of an annual series begun in SFY2006 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.

New enhancements to the CHIP Annual report this year included:

- a comparison of the health status of children by plan type using Clinical Risk Groups (CRG);
- standardization for age and health status (CRG) of utilization (inpatient, outpatient emergency room, office-clinic visits) rates and payment per member per month rates by plan type;
- distinction of psychotherapy visits from other services provided by mental health specialists; and,
- evaluation by adjusted household income to poverty level ratios, of differences in utilization and payment rates, standardized for age and health status (CRG), for children enrolled in Medicaid.

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>46</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>47</sup> The results from the NH CHIS report data confirm this relationship in New Hamp-

shire. Children enrolled in Medicaid had poorer health compared with children enrolled in SCHIP or CHIS commercial plans based on the CRG analysis. Prevalence of mental health disorders in children enrolled in Medicaid was double the rate in NH CHIS commercial.

After adjusting for health status and age differences, hospital inpatient utilization and outpatient emergency department visits were significantly higher in Medicaid than SCHIP or CHIS commercial. Within Medicaid children in poorer households had higher use rates of hospital services and higher payment rates after adjusting for health status and age.

A 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>48</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-three 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. A follow-up NH CHIS study to evaluate children who did not receive a well-child preventive visit is currently under way.

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>49</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. 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.

Payment rates for children enrolled in Medicaid were significantly higher than children enrolled in SCHIP or CHIS commercial. These differences are influenced by the services that Medicaid covers that are not typically covered in SCHIP or commercial plans and the relatively poor health status of children enrolled in Medicaid. After adjusting for these factors, payments PMPM were lower in Medicaid compared with SCHIP or 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>50</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.

This study shows that children enrolled in SCHIP, at least in New Hampshire, had a higher prevalence of disease based on CRG 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 disease and higher utilization rates, average payments per month for children in NH SCHIP were 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 SFY2008 were evaluated with little evidence for any statistically significant changes in rates. Slight increases in preventive visit rates mirrored national trends.

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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 SFY2008, which updated earlier SFY2007 and SFY2006 reports. In addition, the findings of this report suggest a number of additional projects.

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\* New Hampshire Healthy Kids Corporation provider partnerships influence negotiation of more favorable payment rates. See note on page 40.

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. A NH CHIS study of enrollment, disenrollment, and transitions between plan types is currently being finalized.

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 office. 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. A NH CHIS study of children enrolled in Medicaid who did not receive a well-child visit during the year is currently under way. Because NCQA HEDIS measures use a one-year time period to measure a well-child visit, it is possible that some of these children, particularly adolescents, may have had a well-child visit using a wider time-window. This will be evaluated.

The prevalence of mental health disorders was high in NH children enrolled in Medicaid compared to children in SCHIP and commercial coverage. 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 co-existing mental health disorders in children enrolled in Medicaid may be informative as to the causes for the higher medication use rates.

Medicaid covers a significant number of children at birth. On average 3,665 members enrolled in Medicaid were age 0 – 11 months during SFY2008. Compared to other age groups, newborns represent a potential significant cost to the Medicaid program and adverse birth outcomes can significantly impact these costs. NH CHIS is currently planning a study from linked birth certificate and Medicaid claims.

# 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 SFY2008 (July 2007–June 2008) and SFY2007 (July 2006–June 2007) based on date of service. The study focused on SFY2007 results; FY2007 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.

**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 (SFY2008) 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 0450-0459,981 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%20a\\_Defining\\_MH-SA\\_Claimants.pdf](http://www.nri-inc.org/OSA/Download/Appendix%20a_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. Coexisting Substance Abuse**

For this study substance abuse was evaluated as a coexisting (e.g., comorbid) condition. ICD-9-CM codes to identify children with substance abuse problems from the claims data

were based on 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.mhsapayments.org/Defining\\_MH-SA\\_Claimants\\_2003-10.pdf](http://www.mhsapayments.org/Defining_MH-SA_Claimants_2003-10.pdf)

Alcoholic psychoses 291

Alcohol dependence 303,305.0, Drug psychoses 292, Drug dependence/nondependent abuse 304,305.2-305.9, Pellagra 265.2, Alcoholic polyneuropathy 357.5, Polyneuropathy due to drugs 357.6, Alcoholic cardiomyopathy 425.5, Alcoholic gastritis 535.3, Chronic liver disease and cirrhosis with mention of alcohol 571.0 – 571.3, Drug dependence in pregnancy 648.3, Suspected damage to fetus from drugs 655.5, Noxious influences affecting fetus via placenta or breast milk 760.7, Drug withdrawal syndrome in newborn 779.5, Excessive blood level of alcohol 790.3, Drug poisoning by adrenal cortical steroids 962.0, Drug poisoning by opiates and related narcotics 965.0, Drug poisoning by sedatives and hypnotics 967, Drug poisoning by other central nervous system depressants and anesthetics 968, Drug poisoning by psychotropic agents 969, Drug poisoning by central nervous system stimulants 970, Drug poisoning by diabetics 977.0, Drug poisoning by alcohol deterrents 977.3, Toxic effect of alcohol 980

Tobacco abuse disorder (ICD-9-CM 305.1) was not included as substance abuse in this study.

#### **14. Mental Health Specialist Services.**

Mental health specialists are defined based on the provider specialties assigned in the administrative claims data.

- Mental health center 1301
- General mental health 1302
- Psychiatry 3401
- Psychologist 5101
- Psychiatric nurses 5202
- Social workers 5301
- Misc. general mental health specialists 5502

Mental health specialist services were further subset into three sub-categories based on CPT and HCPC coding:

- Psychotherapy (billed to all three plan types using CPT 90804-90857),
- Diagnostic evaluation (e.g., CPT 90801), medication management (e.g., CPT 90862), and testing (e.g., CPT 96101), and other mental service CPT codes billed to all three plan types, and
- Mental specialist services unique to Medicaid (e.g., community mental health support H0036, case management T1016, and crises intervention services H2011), and other HCPCS codes primarily billed to Medicaid only. The NH Medicaid benefit limit for psychotherapy is 12 visits per year for ARNPs and other non-physician providers.

#### **15. 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.

**16. 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. In addition to reporting total Medicaid payments, Medicaid payments after exclusion of services typically not covered by private insurance or SCHIP were evaluated. In addition dental claims were excluded because coverage is incomplete in members with private insurance and dental claims data was not available for SCHIP at the time of the study. The exclusions included dental (COS 45), private non-medical institutions (COS 78), clinic services (COS 25) 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), and ICF services for the mentally retarded (COS 102) are institutional services for the mentally retarded. Exclusion of these services increased the validity of payment comparisons between Medicaid, SCHIP and CHIS commercial plan types.

## **17. 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.

## 18. Health Status. Clinical Risk Groups (CRG)

In order to compare the overall burden of disease the 3M Health Systems Clinical Risk Grouper (CRG) was applied to the administrative claims data.<sup>51</sup> The CRG system was designed for relative risk assessment. The CRG software uses all ICD-9-CM diagnosis codes from all health care encounters and assigns to a diagnostic category (acute or chronic) and a body system. Each individual is grouped to a defined health status group then to a CRG category and severity level if chronically ill. Over 260 CRG categories are further grouped into higher levels of risk grouping resulting in nine major categories of risk. Each CRG is assigned a relative risk weight based on a common Medicaid weight table provided by 3M. .

### Example of CRG Assignments for a person with both diabetes and asthma

|                          | CRG Code | CRG Description   |
|--------------------------|----------|---|
| CRG                      | 61425    | Diabetes and Asthma Level – 5   |
| ACRG1                    | 614205   | Pair – Diabetes and Other Moderate Chronic Disease Level-5                                  |
| ACRG2                    | 6255     | Pair – One Dominant Chronic Disease and Moderate Chronic Disease or a Minor Chronic Disease |
| ACRG3                    | 64       | Significant Chronic Disease in Multiple Organ Systems Level– 4                              |
| Core Health Status Group | 6        | Disease in Chronic Multiple Organ Systems   |

\*CRG assigned members to a “healthy” CRG category which includes both members with no encounters and members with encounters for preventive service and minor conditions. All members are assigned a relative risk weight. Members classified as healthy are assigned a very low risk weight.

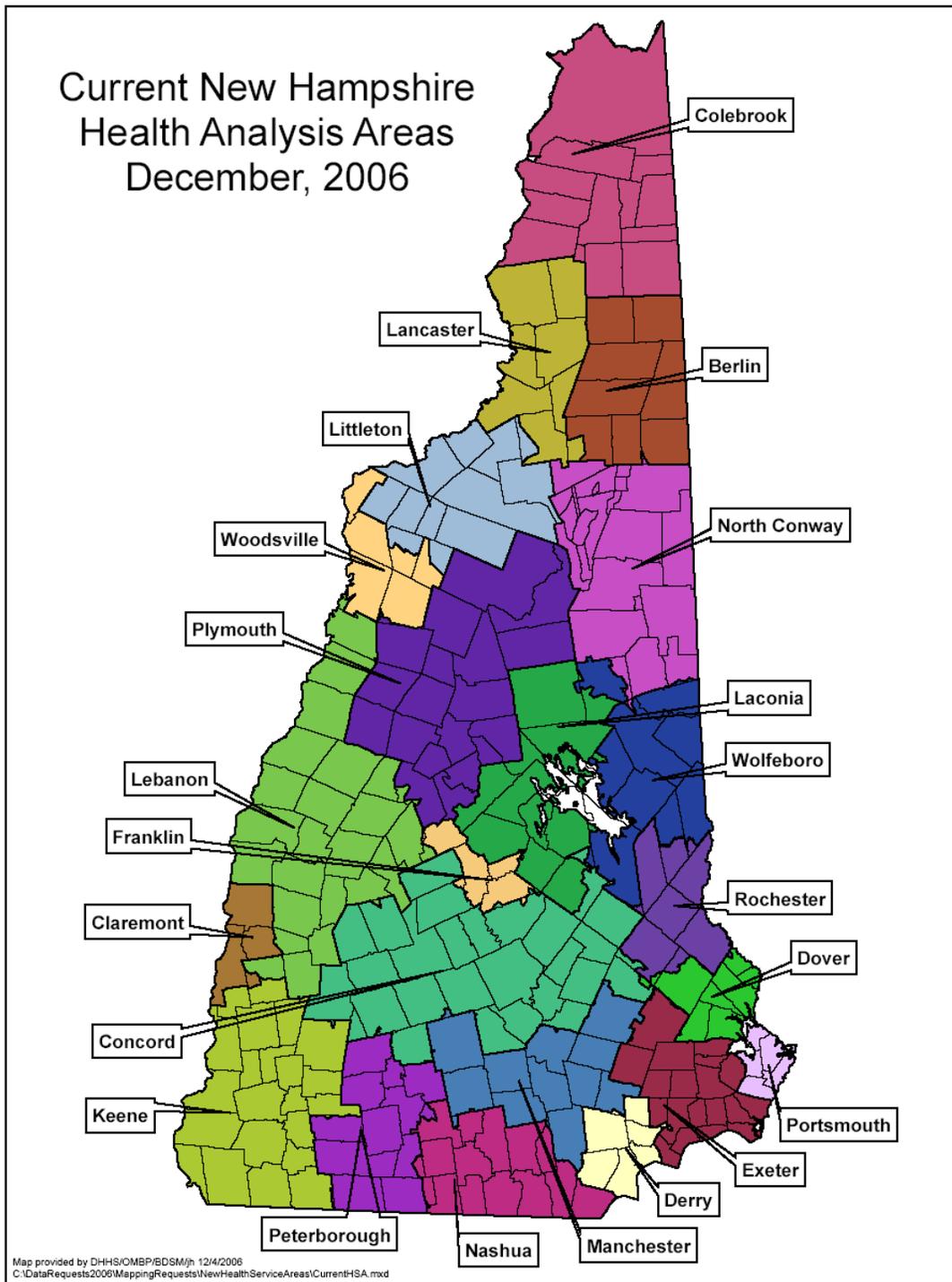
## Appendix 2: NH Medicaid Eligibility Groupings

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* |
| 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         |

\* 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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