UNDERSTANDING NEW HAMPSHIRE DENTAL CLAIMS DATA

Quality Assurance and Preliminary Analysis

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Executive Summary

This report summarizes findings from a project designed to gain understanding of dental claims data in New Hampshire. Building upon current analysis of medical claims data, the project explored the dental claims data to understand how these data can be used to better understand the landscape of oral health service delivery in New Hampshire, with a focus on preventive services, and services to children. The intended outcome was to provide organizations focusing on the improvement of oral health in New Hampshire with an understanding of how the NH CHIS data – and dental claims data in particular – can be used to inform efforts and interventions for oral health in the state.

Exploring these data more fully can be important for many reasons. A more complete understanding about the nature of oral health care costs, and how those are paid for by both dental and health insurance can better inform the conversation about potential opportunities for improvement. To date, the dental claims data have not been tested for their capacity to reliably answer important questions about oral health care.

The project had two major parts: 1. A quality assurance process to determine consistency and validity of the claims data and 2. Preliminary analysis showing findings related to dental plan membership, cost, and utilization. Stakeholder input was essential throughout the process, providing clarity around QA questions and guidance for the preliminary analysis.

The QA process identified several corrections needed to data submissions. The QA process also showed the dental population in NH to be reasonably stable based on persistency and continuity of members. Nothing in the process indicated the data was unstable or in need of extensive follow-up.

Preliminary analysis highlighted several key findings:

- In 2012 there were approximately 889,234 unique members in the NH CHIS dental data. Of those, 747,938 had a NH zip code which represents 56.60% when compared to estimates of the NH population
- The top 9 payers represent approximately 90% of covered lives in the NH dental claims data. Delta Dental Plan of NH is by far the largest payer with over 400,000 members in 2012.
- In 2012, Metropolitan Life Insurance Company had the highest per-member per-month cost, $67.09, of the Top 9 data submitters. State of NH Medicaid had the lowest PMPM, $10.69.
- State of NH Medicaid covers more member-months for people under the age of 14 than Delta Dental Plan of NH. The largest age group by member months overall is 50-59. Despite being the smallest age category for member-months, the 65+ age group has the largest PMPM.
- Geography is based on member's residence. NH Member-months were concentrated, predictably, in the most populous public health regions: Greater Nashua, Capital Area, and Greater Manchester.
- Current Dental Terminology (CDT) codes are used in claims to define the service being performed (and paid for) in the claims adjudication process. Encounters, in these analyses, are defined as a person-day-CDT combination. For Delta Dental Plan of NH, in 2012, approximately 698/1,000 members had a "dental prophylaxis adult" encounter. For State of NH Medicaid in 2012, 438/1,000 members had a "dental prophylaxis child" encounter.

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Focusing on the top 9 payers, representations of cost and utilization demonstrate the breadth of knowledge that can be gained from analysis of dental claims data. Project partners helped to develop several key areas for additional understanding that can be supported by further analysis including linking medical and dental claims, understanding dental service delivery, and analysis focused on providers and populations. Continued work with dental claims will increase the current knowledgebase and strengthen support for existing projects and programs focusing on oral health in New Hampshire.

Introduction

NH CHIS is NH's All-Payer Claims Database. NH CHIS is a legislatively-mandated data collection system in which medical, pharmacy, and dental insurance carriers licensed in New Hampshire are required to submit paid claims data for their full range of covered services. New Hampshire Medicaid is also included in NH CHIS. While the medical and pharmacy claims data have been used extensively in New Hampshire to better understand the cost, utilization, and quality of health care services, the dental claims data have not been explored. Preliminary analysis of the dental claims files indicates that approximately 600,000-700,000 individuals, approximately 140,000 of whom are covered by Medicaid, are represented in these data. Therefore, the dental claims data may be an important source of information to better understand the use and costs associated with the oral health care system in New Hampshire.

In addition, some oral health care services are paid for through health insurance, and understanding more about how medical claims describe the delivery of oral health care services is important. In early 2014, The Institute for Health Policy and Practice (IHPP) conducted preliminary analysis of the NH CHIS **medical** claims data for the frequency of claims for oral health care paid through health insurance in New Hampshire. Table 1 provides estimates for the number of individuals identified in the 2011 NH CHIS medical claims data for a series of oral health related diagnosis codes[1].

Table 1: Medical Claims Counts for Oral Health Issues, New Hampshire, by County, 2011 NH CHIS

Member geographic area	Number of members with oral health diagnosis codes	Number of visits with oral health diagnosis codes
** Non-NH **	2,605	3,615
Belknap	846	1,162
Carroll	470	718
Cheshire	790	1,038
Coos	411	627
Grafton	1,166	1,739
Hillsborough	4,783	7,012
Merrimack	2,341	3,367
Rockingham	3,820	5,831
Strafford	1,498	2,152
Sullivan	531	835
TOTAL	19,261	28,096

Exploring these data more fully can be important for many reasons. A more complete understanding about the nature of oral health care costs, and how those are paid for by both dental and health insurance can better inform the conversation about potential opportunities for improvement. To date,

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[1]ICD-9 codes: 520-529: Disorders of tooth development and eruption, Diseases of hard tissues of teeth, Disease of pulp and periapical tissues, Gingival and periodontal diseases, Dentofacial anomalies, including malocclusion, Other diseases and conditions of teeth and supporting structures, Diseases of the jaws, Diseases of the salivary glands, Diseases of the oral soft tissues, excluding lesions specific for gingiva and tongue, Diseases and other conditions of the tongue)

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the dental claims data have not been tested for their capacity to reliably answer important questions about oral health care.

The proposed project sought to build upon the preliminary analysis of medical claims data, and explore the dental claims data to understand how these data can be used to better understand the landscape of oral health service delivery in New Hampshire, with a focus on preventive services, and services to children. The intended outcome was to provide organizations focusing on the improvement of oral health in New Hampshire with an understanding of how the NH CHIS data – and dental claims data in particular – can be used to inform efforts and interventions for oral health in the state.

This report summarizes findings from the project, focused on quality assurance of the dental claims data and preliminary analyses that explore key issues in oral health care.

Quality Assurance Summary

The CHIS data goes through many quality checks as part of the data submission and consolidation process performed by Milliman, the contracted organization responsible for producing the CHIS data set for the State of New Hampshire (NH Department of Health and Human Services). All checks are performed as part of the data submission process, at the payer level. As a file is submitted, each month, it is processed through a series of file level and quality level checks. "File level" quality checks are designed to capture any deviations in file format, valid values, etc. "Quality checks" are designed to examine any variation in the population of the field. Thresholds are established which define the expected range of values for each field for each payer. If a payer submits a value that falls outside of the expected range, the file is failed and the payer is notified (through an automated system). The payer may then submit a request for an exception for the failure; or a request that the file pass, as is.

In addition to the file level and quality level checks, the data are examined over time by payer. Milliman produces a series of longitudinal audits that examine the volume of members and claims month to month, by payer. Any significant deviation in the volume is noted for the State to review.

In addition to the file/quality checks and longitudinal audits, the University of New Hampshire produces a series of Quality Assurance Reports for the State. Three types of reports are run to evaluate the quality of the APCD data for medical, pharmacy, and dental eligibility and claims. The types of reports are:

1. Persistency: These reports provide counts of total members versus members retained, gained and lost each month. Reports reflect most recent 12 month period.
2. Continuity Reports: These reports detail counts of contiguous coverage for members over most recent 12 month period.
3. High Interaction Reports: These reports look at interactions within and across payers for different keys over most recent 12 month period.
   a. For eligibility, keys used for these reports are Person ID, Member ID and a combination of Date of Birth, Gender and Zip Code (see Key code on the report).
   b. For service interactions (from claims data), the key is Person ID, Date of Service and Procedure Code

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The member persistency and continuity reports are good indicators of the stability of the member population over time, which can be important analytically. For example, some analyses require that there is 12 or more months of continual claims experience. The interaction reports are good indicators of whether two payers may be submitting the same data for the same members (e.g. Payer X and Payer Y both submitted the same claims for Member 101). In that case, the duplicate records would need to be removed analytically, or one of the payers (in some cases) may be required to resubmit the data to the State.

Selection of payers by volume

For the purpose of the HNH project, payers with the highest volume, defined as payers with more than 9,000 members in the most recent 12 month period, were selected for inclusion in the analysis. This criteria was used in preparation for an administrative rule change that went into effect in July 2015, which will exempts small payers (defined as those with less than 10,000 members) from submitting their data to CHIS. For each of the payers that fit this criteria, total member eligibility counts were reviewed. In some cases, the review of member counts led to further investigation and decisions about inclusion of the data in the preliminary analysis phase of the project (described in more detail below). These findings were reviewed with a stakeholder group, including representatives from the NH Oral Health Program, NH Oral Health Coalition, NH Medicaid Program, and NH Dental Society in June 2015.

Table 2. Top Claims Submitters, Dental Claims Files, NH CHIS, 2013 and 2014

Top 10 Dental Claims Data Submitters	Total Members (dental eligibility) 2013	Total Members (dental eligibility) 2014
1. Delta Dental Plan of NH	403,534	365,620
2. State of NH Medicaid	147,248	Not Available
3. Metropolitan Life Insurance Company	100,703	99,375
4. Cigna Health and Life Insurance Company	57,429	77,035
5. Aetna Life Insurance Company	41,027	40,437
6. Health Plans Inc	25,619	27,584
7. Connecticut General Life Insurance Company	20,594	856 (see Cigna)
8. Harvard Pilgrim Health Care of New England	Not in 2013	16,848
9. Delta Dental Insurance Company	13,906	14,404
10. Ameritas Life Insurance Company	11,788	10,556
11. Delta Dental of California	9,897	8,287
11. Principal Life Insurance Company	9,811	10,272
11. Dental Benefit Providers, Inc	9,479	8,698
All Other Dental Claims Submitters	42,518 (5%)	48,428 (6%)
TOTAL	900,812	728,400

In review of the largest payers, it appeared that the Harvard dental data may reflect an error in processing. This issue was brought to the attention of the State and Milliman for further investigation. In the meantime, Harvard Pilgrim was not included in the analysis for HNH.

In addition, there were some irregularities in the Cigna data (drop in volume from 2013 to 2014 for Connecticut General Life Insurance Company and equal increase in volume for Cigna Health And Life Insurance Company). This is reflective of a change in data processing for Cigna and is known to the State

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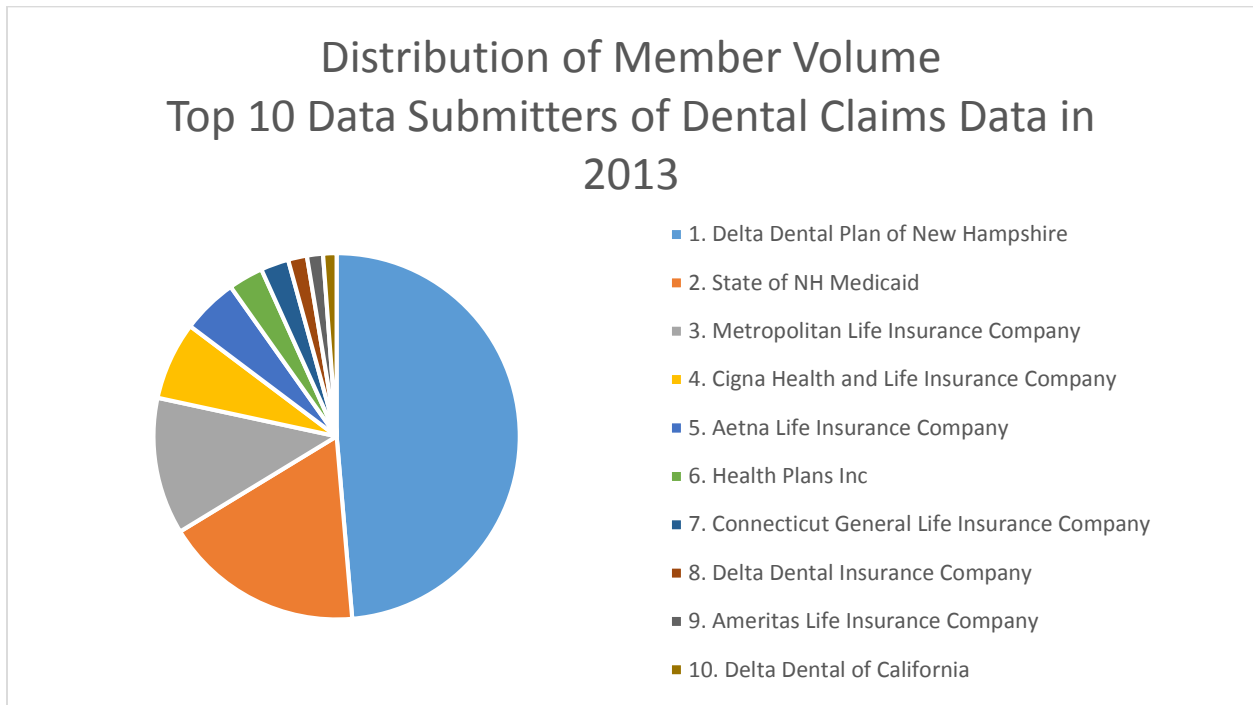Institute for Health Policy and Practice

and Milliman, and was an expected finding in the quality assurance analysis. Cigna was in the process of resubmitting data at the time of this analysis and the issue should be resolved in the January 2016 CHIS extract.

The availability of 2014 Medicaid data is anticipated for 2016, but was not available at the time the analysis was run.

Overall, the distribution of dental payers for 2013 clearly shows that Delta Dental Plan of NH is the largest followed by Met Life, Cigna, and Aetna. Also of interest is the multiple Delta Dental plans (Delta Dental Plan of NH, Delta Dental Insurance Company, and Delta Dental of California) that are submitting data separately.

This analysis showed that focusing on the Top 10 submitters captured over 90% of all members. Those submitters were those selected for inclusion in the preliminary analysis phase of the project.

Chart 1. Member Distribution for Top 10 Data Submitter for Dental Claims Data, NH CHIS, 2013

Distribution of Member Volume
Top 10 Data Submitters of Dental Claims Data in 2013

- 1. Delta Dental Plan of New Hampshire
- 2. State of NH Medicaid
- 3. Metropolitan Life Insurance Company
- 4. Cigna Health and Life Insurance Company
- 5. Aetna Life Insurance Company
- 6. Health Plans Inc
- 7. Connecticut General Life Insurance Company
- 8. Delta Dental Insurance Company
- 9. Ameritas Life Insurance Company
- 10. Delta Dental of California

Continuity of membership

Members' continuous coverage was analyzed for each of the largest payers. Many of the dental payers had high continuous coverage for both 2013 and 2014 (e.g., around 70% of members showing enrollment with the carrier for 12 continuous months), reflecting a very stable population for further analysis.

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Table 3. Continuity of Membership, by Data Submitter, Dental Claims Files, NH CHIS, 2013 and 2014

Data Submitter (over 10,000 lives)	Total Members with continuous coverage for 12 months in 2013	Total Members with continuous coverage for 12 months in 2014
Delta Dental Plan of NH	79%	73%
State of Medicaid	0%	--
Metropolitan Life Insurance Company	73%*	72%*
Cigna Health and Life Insurance Company	57%***	63%***
Aetna Life Insurance Company	69%	69%
Health Plans Inc	34%	68%
Connecticut General Life Insurance Company	42%***	-- ***
Delta Dental Insurance Company	0%**	0%**
Ameritas Life Insurance Company	53%	47%
Delta Dental of California	59%	69%

***The change in data processing for Cigna previously mentioned can be seen in the measure of continuity. The measure of continuity will likely improve after the resubmission of Cigna data is complete.

**Delta Dental Insurance Company has a known gap in their data for July 2013 and March 2014, resulting in 0% continuity for this payer. Milliman has requested that this data be submitted.

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Type of Service

In anticipation of analysis of specific types of services for the HNH project (e.g. preventive care), an additional series of reports were examined to understand dental claims data by types of services. IHPP examined a series of reports related to PMPM costs (allowed amount dollars per member per month) by Type of Service (TOS).

Examination of the PMPM by TOS revealed that one of the payers had a very high PMPM for anesthesia relative to the other types of services (e.g. preventive care), and relative to other payers PMPM for the same type of service. Excerpts from the QA reports that showed the unexpectedly high PMPM for anesthesia, with low PMPM for Preventive Services, for Met Life are shown below. An excerpt from the same report for Delta Dental of NH is also shown below. After investigating the issue, it was discovered that Metropolitan Life Insurance Company was using a historic procedure code list (i.e. codes had a leading "0" instead of "D"). This issue was brought to the attention of the State and Milliman, and the carrier is in the process of resubmitting historical data. Milliman has also applied an additional field level check to ensure that the appropriate code set is being used for dental procedure codes, in data submissions to CHIS going forward.

Dental Claims - Paid PMPM by Type of Service

Type of Service	Total 2013	Jan 2013	Feb 2013	Mar 2013	Apr 2013	May 2013	Jun 2013	Jul 2013	Aug 2013	Sep 2013	Oct 2013	Nov 2013	Dec 2013
System=(NHC0269A) Metropolitan Life Insurance Company-Dental													
Class=DEN Payer Type=COM Product=DEN Total Dental MM= 1,032,512 Avg. Total Dental MM= 86,043													
ANESTH.	$44	$54	$42	$46	$48	$47	$43	$41	$43	$39	$44	$39	$41
ANESTH.HEAD	$8	$9	$7	$8	$8	$8	$7	$8	$8	$7	$8	$7	$7
DENTAL.	$0.02	$0.01	$0.02	$0.03	$0.01	$0.01	$0.01	$0.03	$0.02	$0	$0.01	$0.02	$0.02
DENTAL.PREVNT	$0.23	$0.27	$0.21	$0.18	$0.21	$0.23	$0.18	$0.24	$0.26	$0.18	$0.25	$0.22	$0.30

Dental Claims - Paid PMPM by Type of Service

Type of Service	Total 2013	Jan 2013	Feb 2013	Mar 2013	Apr 2013	May 2013	Jun 2013	Jul 2013	Aug 2013	Sep 2013	Oct 2013	Nov 2013	Dec 2013

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System=(NHC0675) Delta Dental Plan of New Hampshire													
Total Dental MM= 4,232,957 Avg. Total Dental MM= 352,746													
ANESTH.	$0	$0	$0	$0.01	$0.01	$0	$0	$0	$0	$0	$0	$0	$0.01
DENTAL.	$0.26	$0.27	$0.29	$0.27	$0.31	$0.29	$0.26	$0.29	$0.29	$0.19	$0.24	$0.24	$0.24
DENTAL.PREVNT	$5	$6	$5	$5	$6	$6	$5	$6	$6	$5	$6	$5	$5

The data used for analysis was adjusted to account for errors in Metropolitan Life Insurance Company claims processing. A procedure code fix was employed for all Metropolitan Life Insurance Company claims. All claims with procedure code with a leading "0" were changed so the procedure code had a leading "D".

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Preliminary Analysis

Methodology

Preliminary analysis of the NH dental claims data incorporated findings from the Quality Assurance process and input from the initial stakeholder meetings. Analysis focused on the most recent relevant years of data for Commercial and Medicaid claims data, including 2011, 2012, and 2013. Medicaid dental claims is limited by a significant claims processing change that occurred in 2013. Beginning in the second calendar quarter of 2013, NH DHHS changed claims processing systems to a new Medicaid Management Information System (MMIS). After that change, consistent Medicaid claims data has not been submitted to the NH CHIS. Therefore, the last full year of analyzable Medicaid claims data is 2012, and the majority of Medicaid claims analysis is based on that year.

All analyses included in this report was are based on the dental claims data. As previously mentioned, the analyses focused on the top dental payers in NH, which represent approximately 90% of all members. Additionally, when displaying the experience in commercial insurance, Delta Dental Plan of New Hampshire is often the only commercial plan shown, because it is the largest dental plan, representing 45.8% of all members and 47.6% of all member months.

Data processing was performed using SAS®. Analysis was presented using the SAS Visual Analytics (VA) platform In displaying these results to the stakeholder group, the VA platform allowed for various data manipulations including changing the year, payer, measure of analysis (members, member months, PMPM, etc.). Some stakeholder areas of interest and questions were addressed during the meeting using these manipulations. While presented here as static pictures, a presentation of this analysis in the dynamic platform is available upon request.

Analytic Results

Approximately 56% of NH population had some form of dental care coverage in 2012 (as shown in Table 4). Not represented here are individuals receiving care through programs that are not reimbursed through Commercial or Medicaid insurances (such as some school clinics or the Molar Express services)

Table 4: Overall NH population compared to unique members identified in NH CHIS data

Total NH Population (2014 Census Estimate)	NH Dental Data - 2012 All Members, All plans (including members with a zip code out of state)	NH Dental Data – 2012 All Members, All plans (only members with a NH zip code)	Percent
1,321,297	889,234	747,938	56.60%

Greater Manchester public health region has the highest percent of NH residents with dental coverage, 56.9% with the lowest percent in Greater Derry, 44.8% (as shown in Table 5).

Table 5: Regional breakout of NH population compared to unique members identified in NH CHIS data

Public Health Region	Estimated Population (From PHN webpage)	Medicaid Members	Medicaid Percent	Commercial Members	Commercial Percent	Total Members	Total Percent
Capital Area	136,741	16,136	11.8%	61,519	45.0%	77,655	56.8%
Carroll County	47,000	6,999	14.9%	15,003	31.9%	22,002	46.8%
Central NH	27,322	4,124	15.1%	10,006	36.6%	14,130	51.7%
Greater Derry	138,000	9,162	6.6%	52,684	38.2%	61,846	44.8%
Greater Manchester	180,000	27,070	15.0%	75,359	41.9%	102,429	56.9%
Greater Monadnock	104,000	12,504	12.0%	37,830	36.4%	50,334	48.4%
Greater Nashua	205,765	19,525	9.5%	82,880	40.3%	102,405	49.8%
Greater Sullivan County	42,000	6,872	16.4%	16,438	39.1%	23,310	55.5%
Lakes Area	80,000	12,205	15.3%	30,276	37.8%	42,481	53.1%
North Country	52,000	9,831	18.9%	15,469	29.7%	25,300	48.7%
Seacoast	140,000	11,297	8.1%	55,228	39.4%	66,525	47.5%

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Strafford County	123,000	16,101	13.1%	42,179	34.3%	58,280	47.4%
Upper Valley	44,600	2,827	6.3%	20,460	45.9%	23,287	52.2%
Out of state		4,587		124,965		129,552	

* Only includes members in top 9 payers (n=799,536)

67.6% of children under 5 have some dental coverage, 41% of whom is covered by Medicaid. 18.5 percent of older adults over 65 have dental coverage.

Table 6: Age breakout of NH population compared to unique members identified in NH CHIS data

Age category	Estimated Population (2014 Census)	Medicaid members	Medicaid percent	Commercial members	Commercial percent	Total members	Total Percent
Under 5	66,135	27,193	41.1%	17,516	26.5%	44,709	67.6%
5 to 20	315,381	63,688	20.2%	98,302	31.2%	161,990	51.4%
20 to 65	661,288	47,617	7.2%	361,052	54.6%	408,669	61.8%
Over 65	278,493	13,153	4.7%	38,401	13.8%	51,554	18.5%
Unknown	NA	2	NA	60	NA	62	NA

* Only includes top 9 payers and members with a NH zip code (n=666,984)

Analysis by Payer

With more than 400,000 members, Delta Dental Plan of NH is by far the largest plan in NH. State of NH Medicaid is second, with Metropolitan Life Insurance Company third. The top 9 payers represent approximately 90% of all covered lives in 2012.

Chart 2: 2012 Dental Coverage Members, all payers, 2012 NH CHIS

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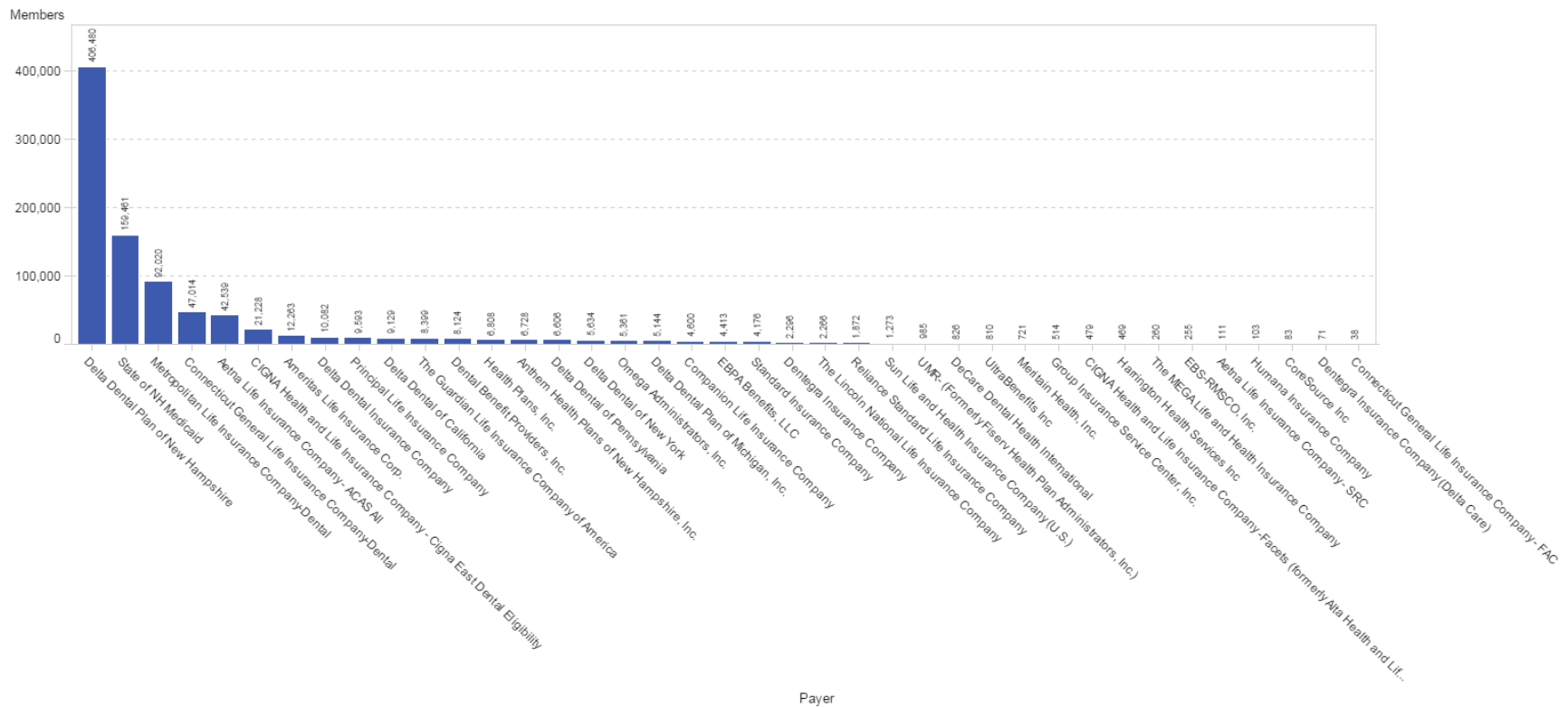
Among commercial dental plans, Delta Dental Plan of NH has the largest number of member months in 2011, 2012, and 2013. Most plans have a relatively stable number of member months across the three years. State of NH Medicaid has no data for 2013, as previously described.

Chart 3: Dental Plan Member Months for Top 9 Payers and in Total, by year, NH CHIS
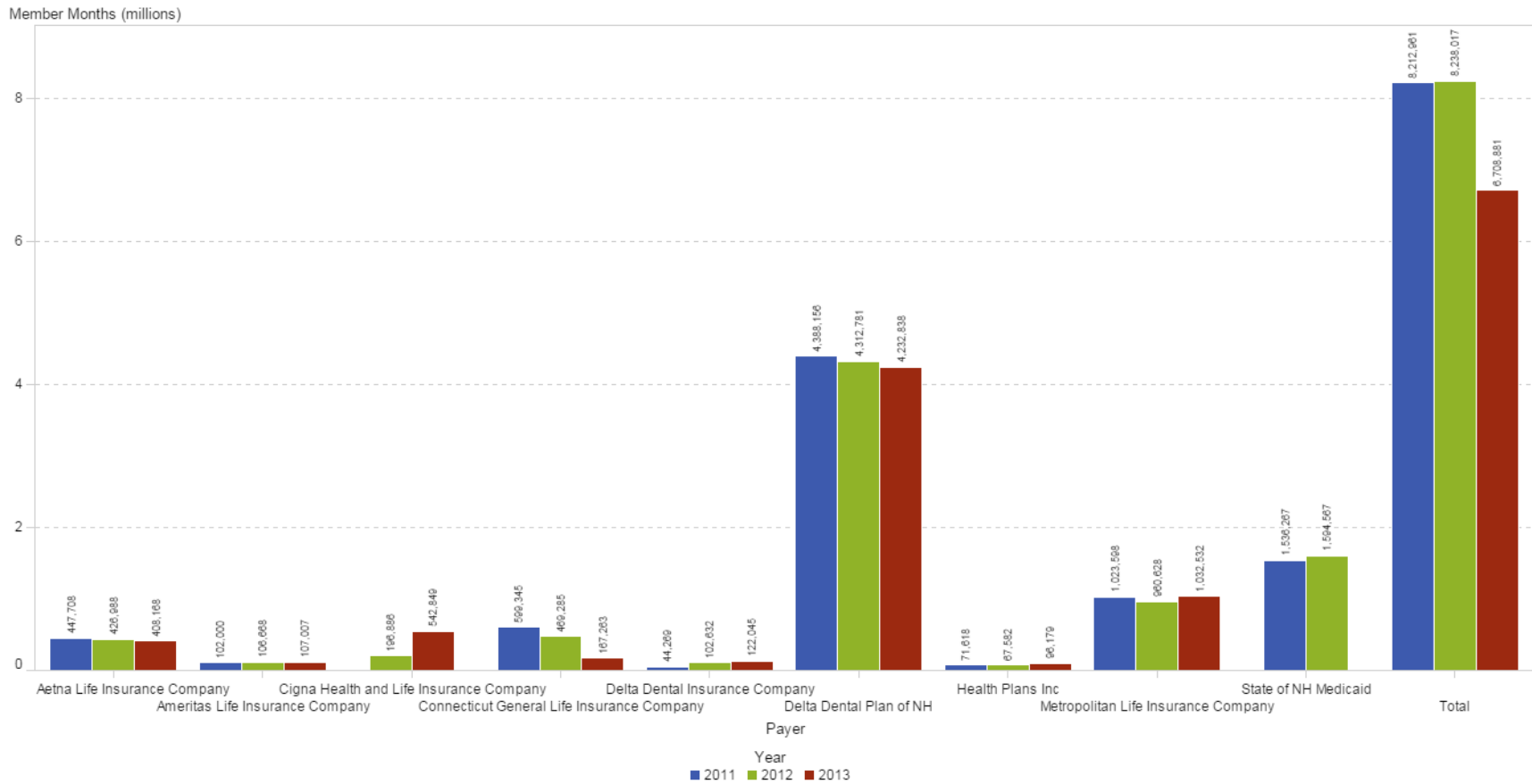
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In 2012, Metropolitan Life Insurance Company had the highest per-member per-month cost, $67.09, of the Top 9 data submitters. State of NH Medicaid had the lowest PMPM, $10.69.

Chart 4: Per-Member Per-Month (PMPM) for Top 9 Payers and Total, by year, NH CHIS

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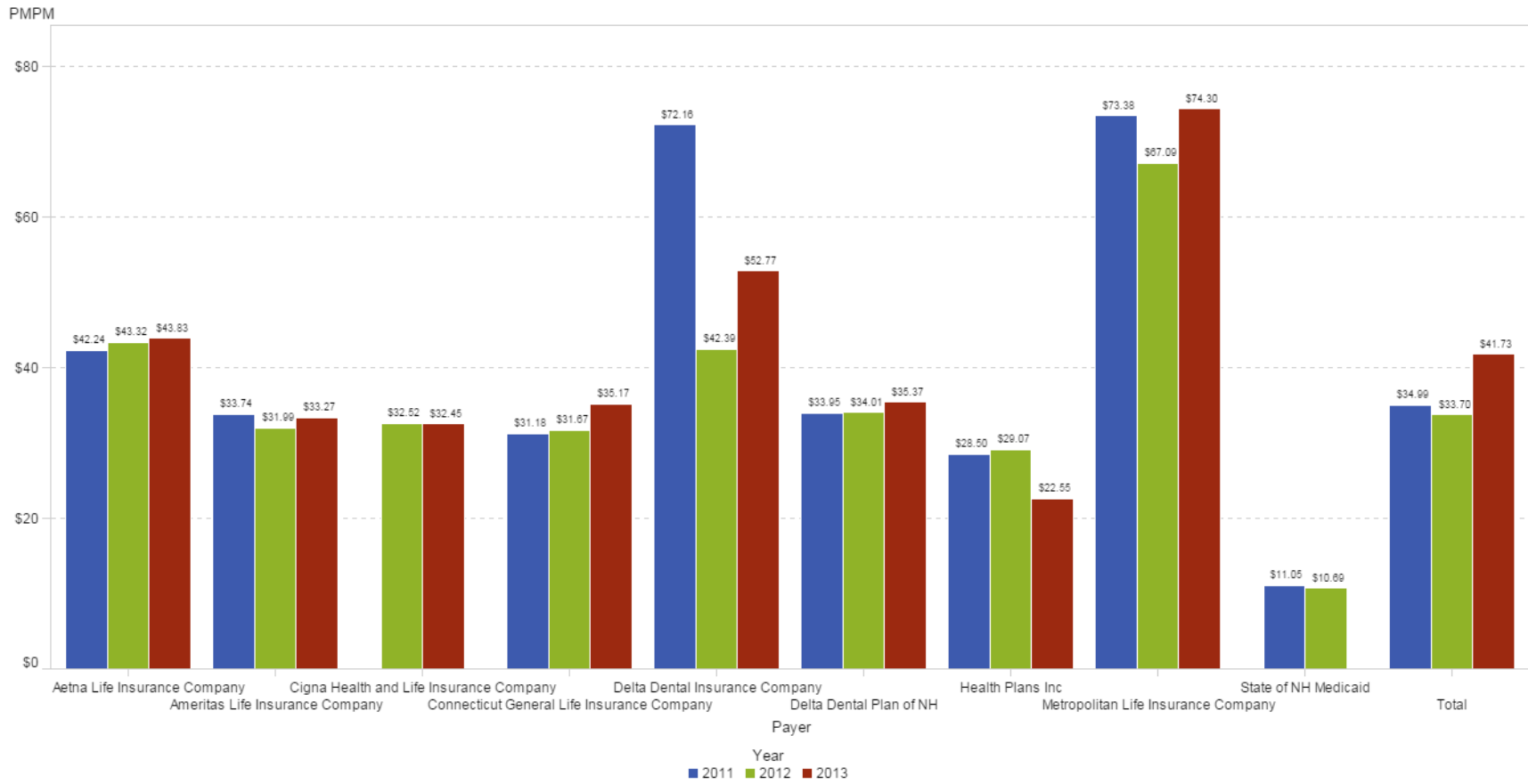
Table 7: Members, Member Months, Total Allowed Cost, Per-Member Per-Month for Top 9 Payers and Total, by year, NH CHIS

Year ▲	2011				2012				2013				
Payer ▲	Members	Member Months	Cost (Allowed)	PMPM	Members	Member Months	Cost (Allowed)	PMPM	Members	Member Months	Cost (Allowed)	PMPM	
Aetna Life Insurance Company	48,522	447,708	$18,911,160	$42.24	42,539	426,988	$18,496,245	$43.32	41,027	408,168	$17,891,866	$43.83	
Ameritas Life Insurance Company	12,182	102,000	$3,441,043	$33.74	12,263	106,668	$3,412,023	$31.99	11,717	107,007	$3,560,600	$33.27	
Cigna Health and Life Insurance Company	.	.	.	.	21,234	196,886	$6,402,996	$32.52	56,784	542,849	$17,614,509	$32.45	
Connecticut General Life Insurance Company	61,143	599,345	$18,688,431	$31.18	47,060	469,285	$14,861,870	$31.67	12,251	167,263	$5,882,113	$35.17	
Delta Dental Insurance Company	8,320	44,269	$3,194,598	$72.16	10,089	102,632	$4,350,536	$42.39	12,908	122,045	$6,439,966	$52.77	
Delta Dental Plan of NH	413,375	4,388,156	$148,986,794	$33.95	407,060	4,312,781	$146,665,916	$34.01	391,222	4,232,838	$149,702,388	$35.37	
Health Plans Inc	7,331	71,618	$2,041,219	$28.50	6,894	67,582	$1,964,756	$29.07	9,305	96,179	$2,168,424	$22.55	
Metropolitan Life Insurance Company	94,472	1,023,598	$75,116,223	$73.38	93,157	960,628	$64,453,285	$67.09	95,139	1,032,532	$76,715,279	$74.30	
State of NH Medicaid	153,640	1,536,267	$16,973,329	$11.05	159,240	1,594,567	$17,047,224	$10.69	.	.	.	.	
Total	798,985	8,212,961	$287,352,798	$34.99	799,536	8,238,017	$277,654,852	$33.70	630,353	6,708,881	$279,975,146	$41.73	

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Analysis by Age

For analysis to compare commercial and Medicaid experience by age group, commercial analysis is based on the largest commercial insurer, Delta Dental of NH.

Sate of NH Medicaid covers more member-months for people under the age of 14 than Delta Dental Plan of NH. The largest age group by member months overall is 50-59.

Chart 5: Member-months, by Age Group, Delta Dental Plan of NH and State of NH Medicaid, 2012 NH CHIS
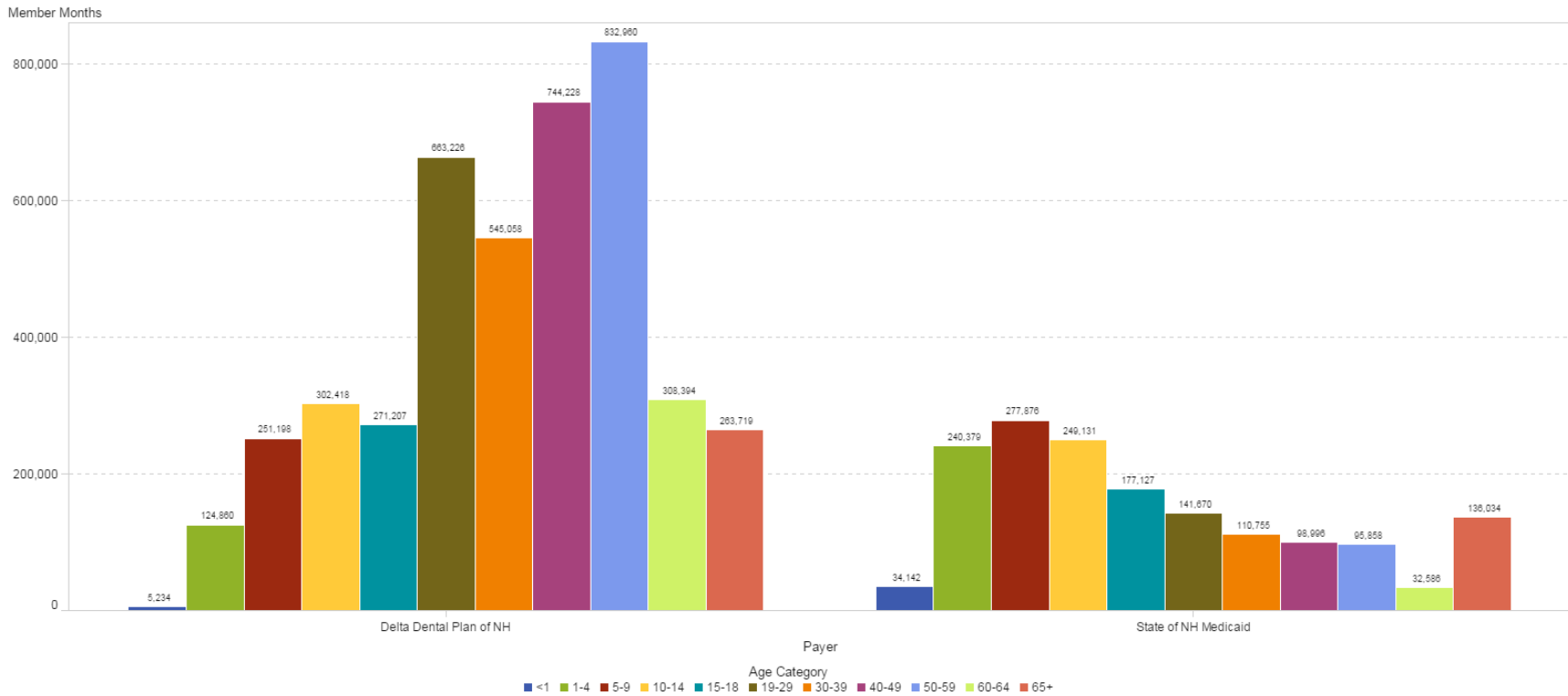
Despite being the smallest age category for member-months, the 65+ age group has the largest PMPM. This indicates a smaller covered population with high utilization and/or costly services. There is a noticeable spike in PMPM in the commercial, 10-14 age group, possibly reflecting more expensive covered services, such as orthodontia.

Chart 6: Per-Member, Per-Month, by Age Group, Delta Dental Plan of NH and State of NH Medicaid, 2012 NH CHIS

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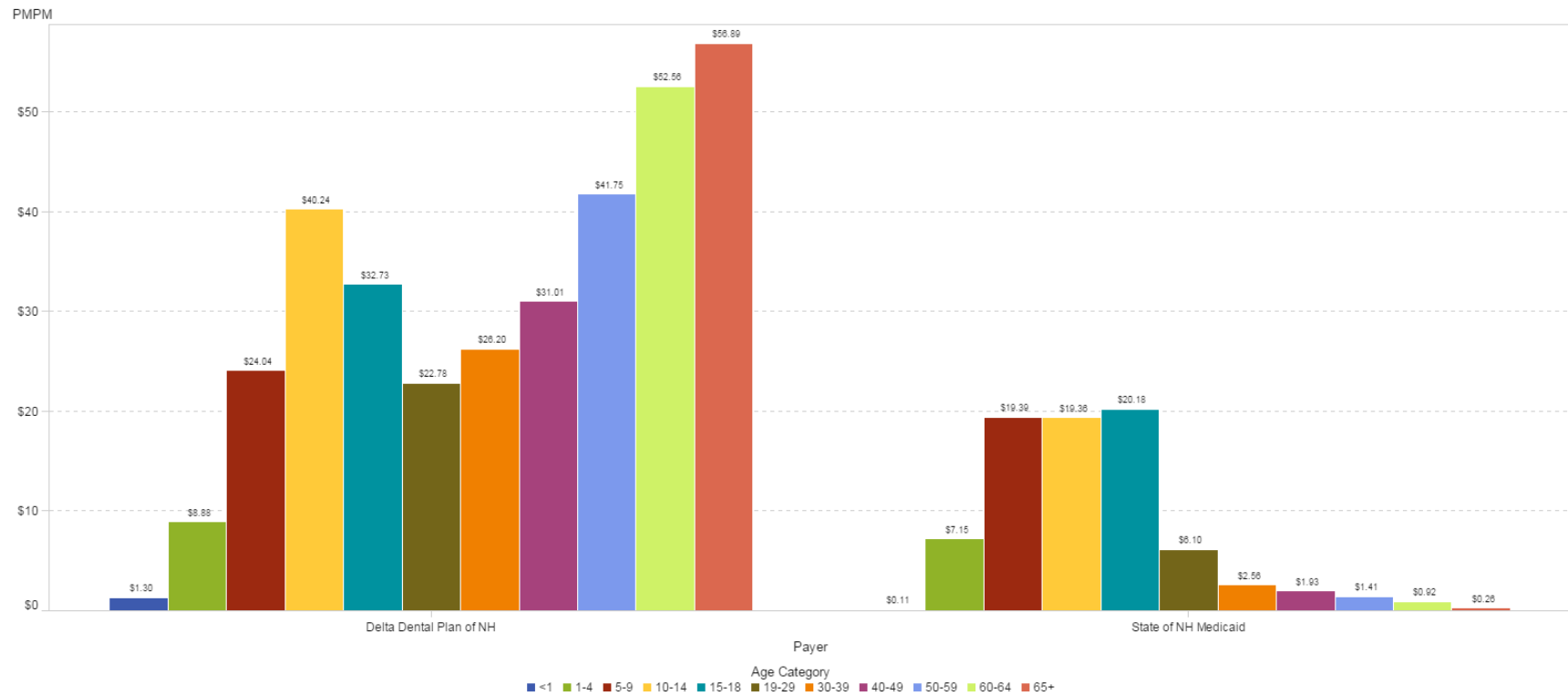
Analysis by Gender

The number of dental member-months is relatively even between males and females.

Chart 7: Member-months, by Gender for Top 9 Payers, 2012 NH CHIS
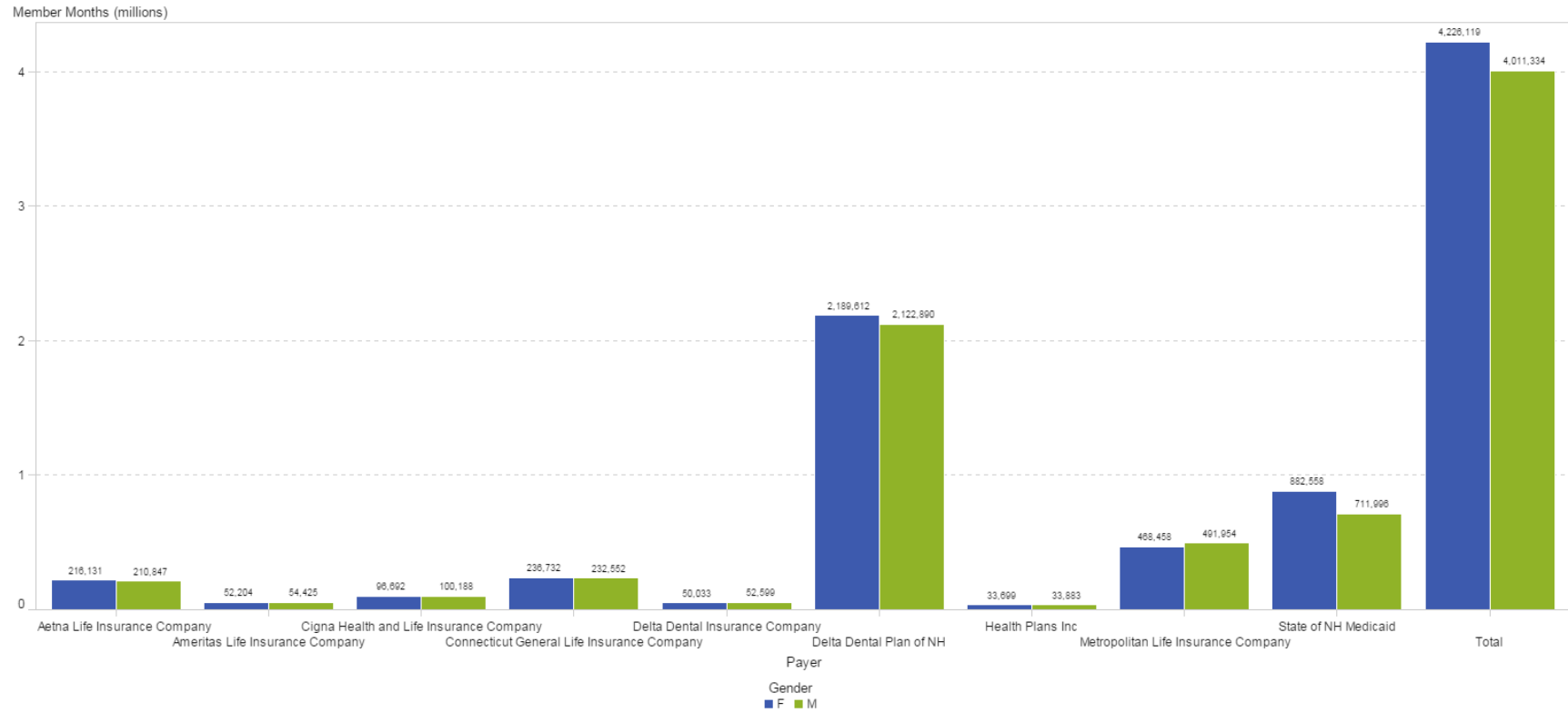
PMPM cost is higher for females, indicating a higher utilization of services or more expensive services.

Chart 8: Per-Member Per-Month, by Gender for Top 9 Payers, 2012 NH CHIS

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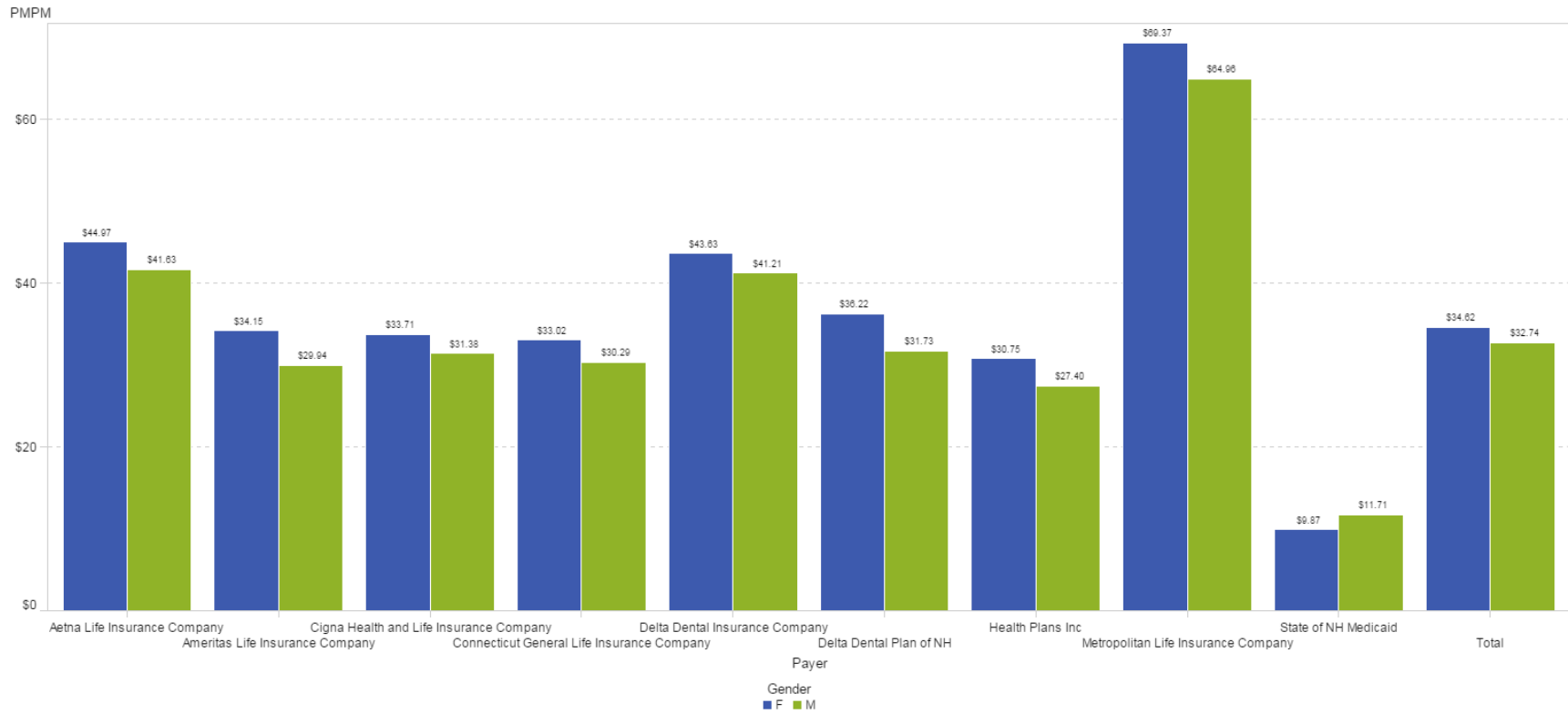
In these analyses, geography is based on member's residence. Member-months were concentrated, predictably, in the most populous public health regions: Greater Nashua, Capital Area, Greater Manchester. "Out of state" has the largest contribution of member months.

Chart 9: 2012 member months by public health region for Delta Dental Plan of NH and State of NH Medicaid

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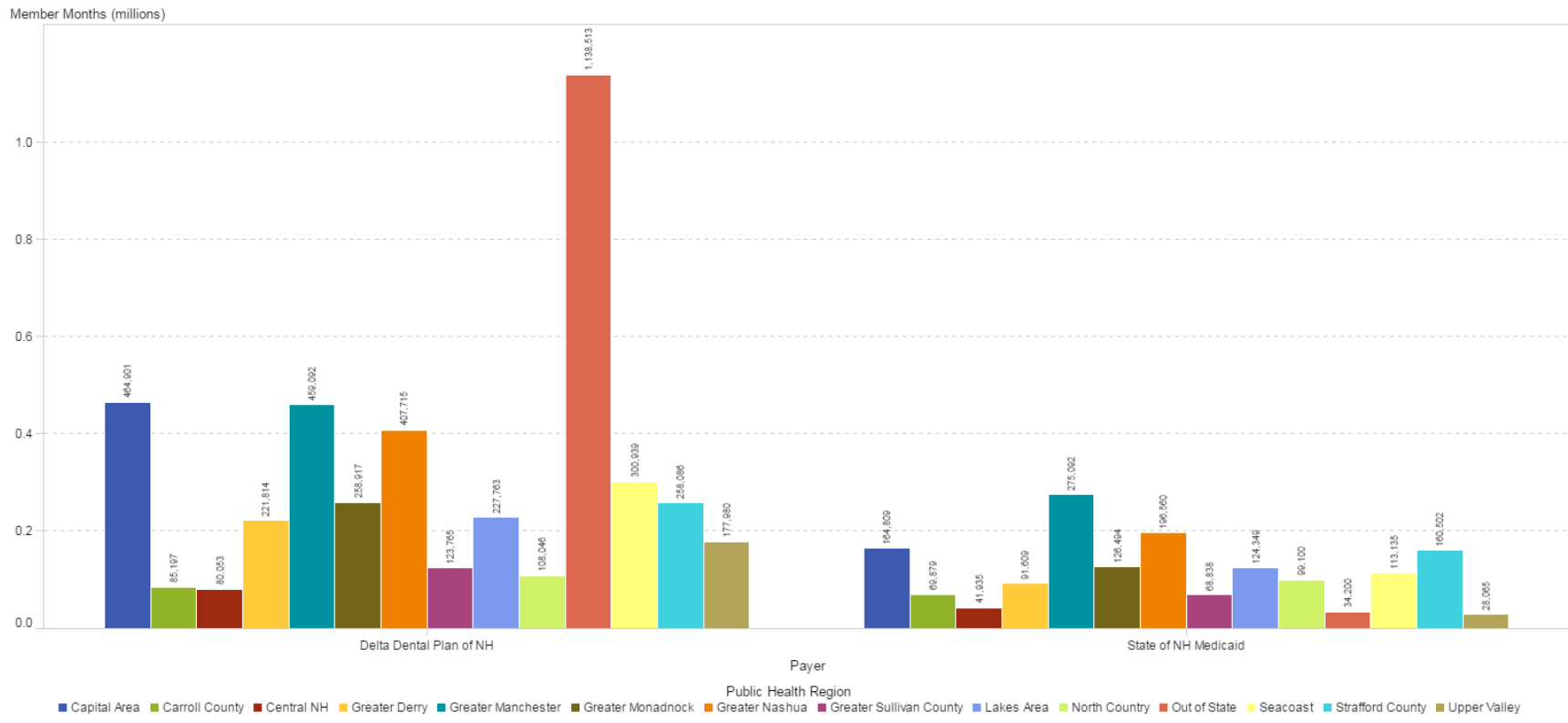
Commercial PMPM costs were greatest in the Greater Nashua area, with PMPM $50.16 for Delta Dental Plan of NH. North Country PMPM was lowest, at $35.04.

Chart 10: Per-Member Per-Month, by Public Health Region for Delta Dental Plan of NH and State of NH Medicaid, 2012 NH CHIS

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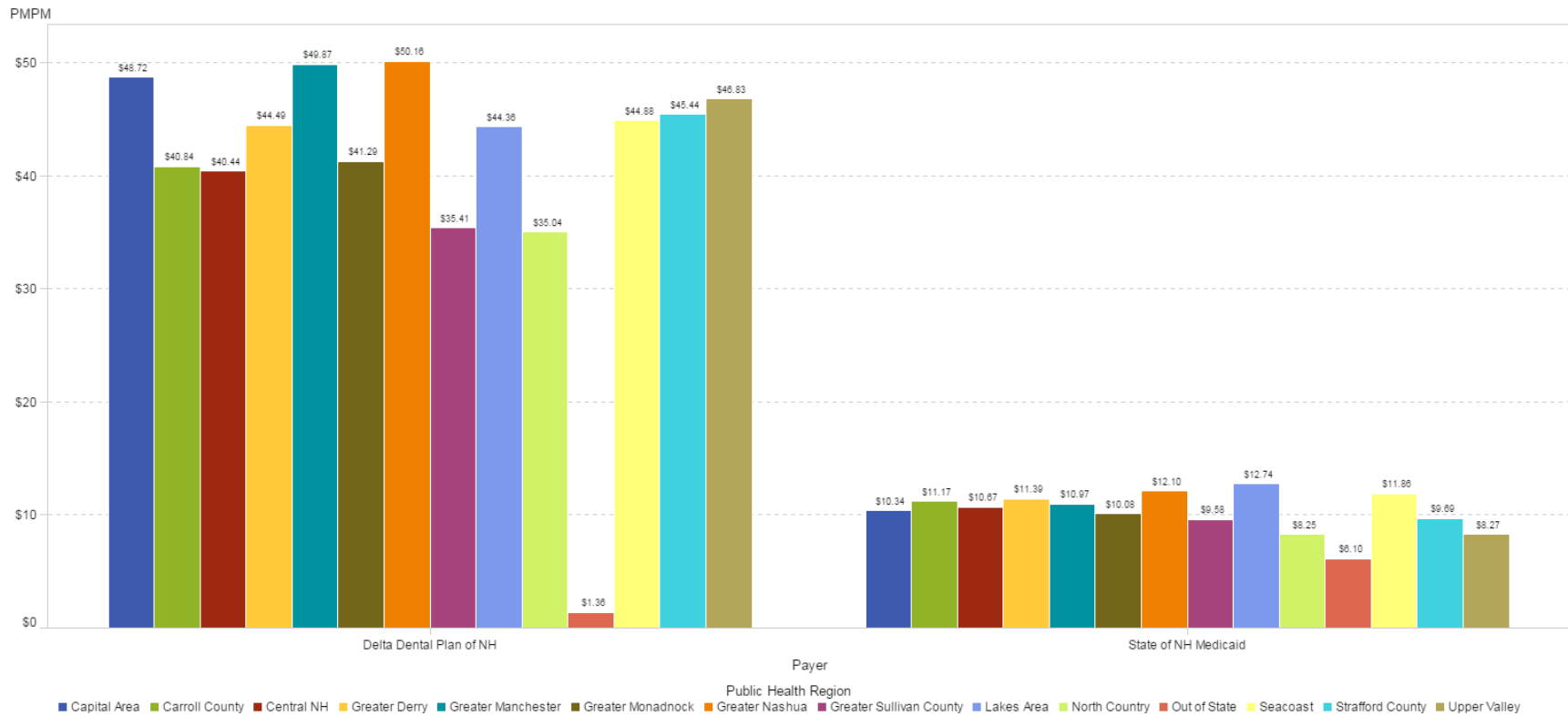
The geographic representation of Delta Dental Plan of NH member months and PMPM shows a high concentration of members along the I-93 corridor, southeast, and seacoast area with the darker blue circles showing some small areas of high cost throughout the state.

Map 1: Geographic representation of member months (size of circle) and per-member per-month (color of circle) for Delta Dental Plan of NH

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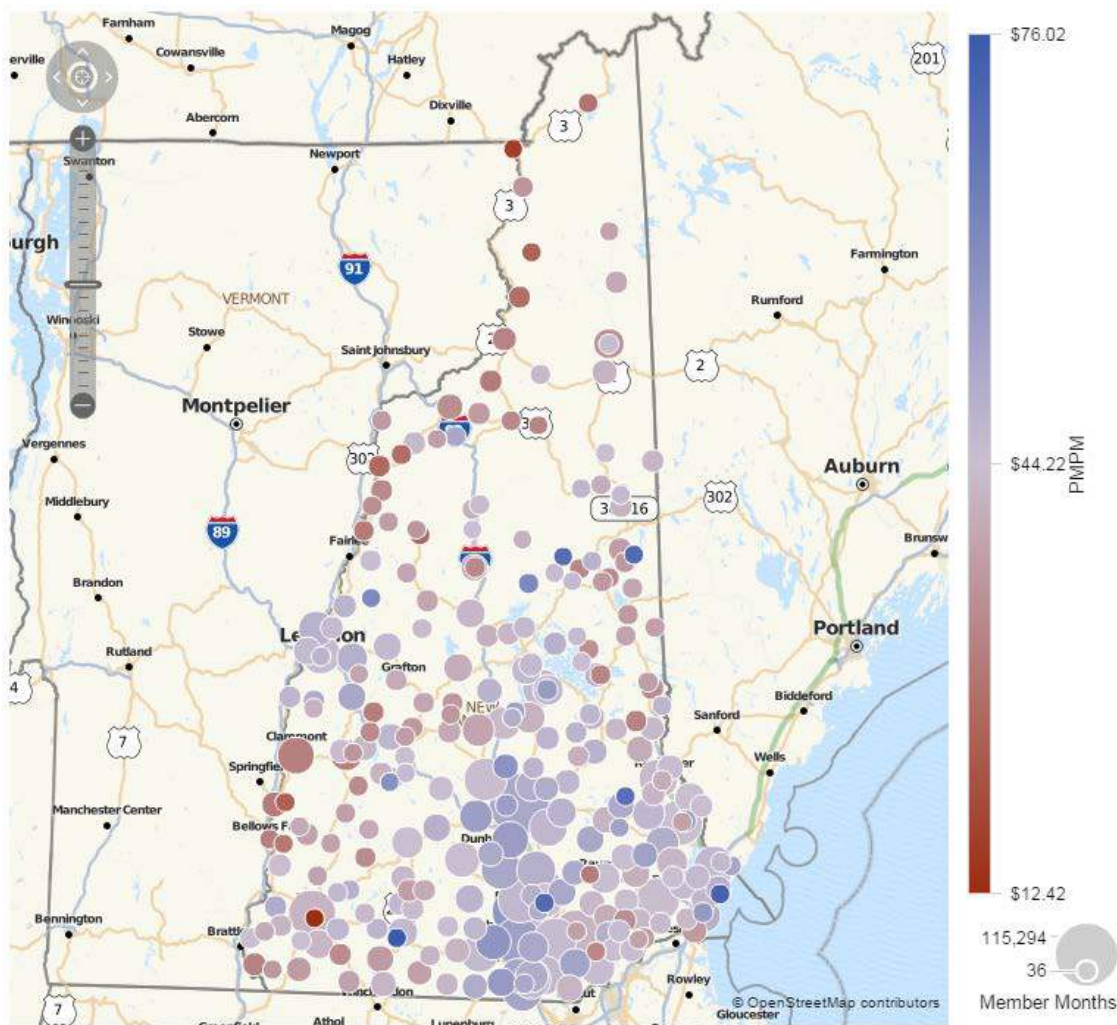
Analysis by Type of Encounter

Current Dental Terminology (CDT) codes are used in claims to define the service being performed (and paid for) in the claims adjudication process. Encounters, in these analyses, are defined as a person-day-CDT combination. For Delta Dental Plan of NH, in 2012, approximately 698/1,000 members had a "dental prophylaxis adult" encounter. For State of NH Medicaid in 2012, 438/1,000 members had a dental prophylaxis child encounter.

Chart 11: Top 20 Current Dental Terminology (CDT) Encounters, per 1,000 members, for Delta Dental Plan of NH, Metropolitan Life Insurance Company, and State of NH Medicaid, 2012 NH CHIS

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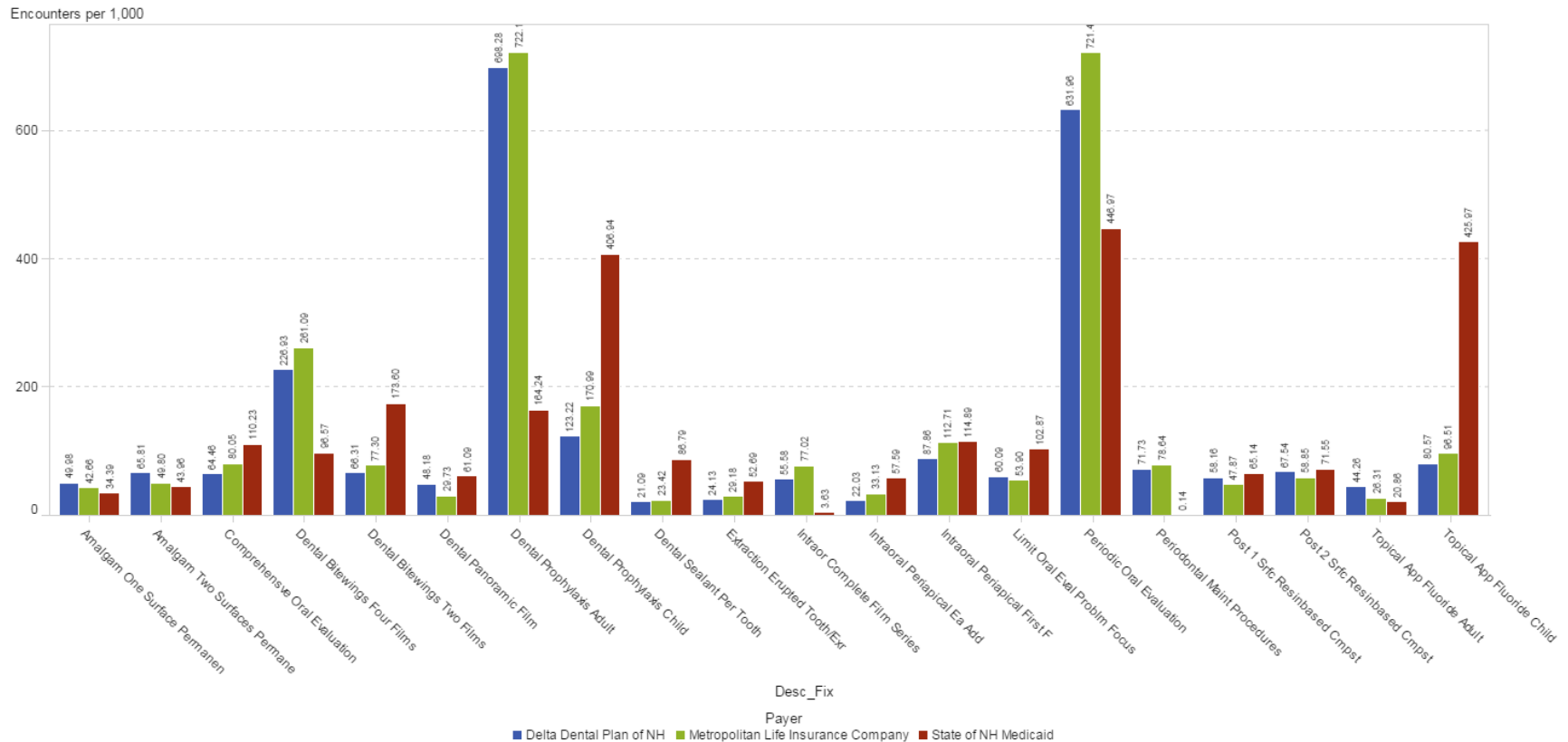
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Chart 12 displays the PMPM Costs for encounters of different types, based on CDT codes, for Delta Dental Plan of NH, Metropolitan Life Insurance Company, and State of NH Medicaid. PMPM cost of dental prophylaxis adult and periodic oral evaluation for Metropolitan Life Insurance Company is significantly higher than the other plans. Additional exploration is needed to determine what the underlying reason for this is, including benefit structure or payment differences across payers.

Chart 12: Top 20 Per-Member Per-Month Current Dental Terminology (CDT) Code Encounters, for Delta Dental Plan of NH, Metropolitan Life Insurance Company, and State of NH Medicaid, 2012 NH CHIS

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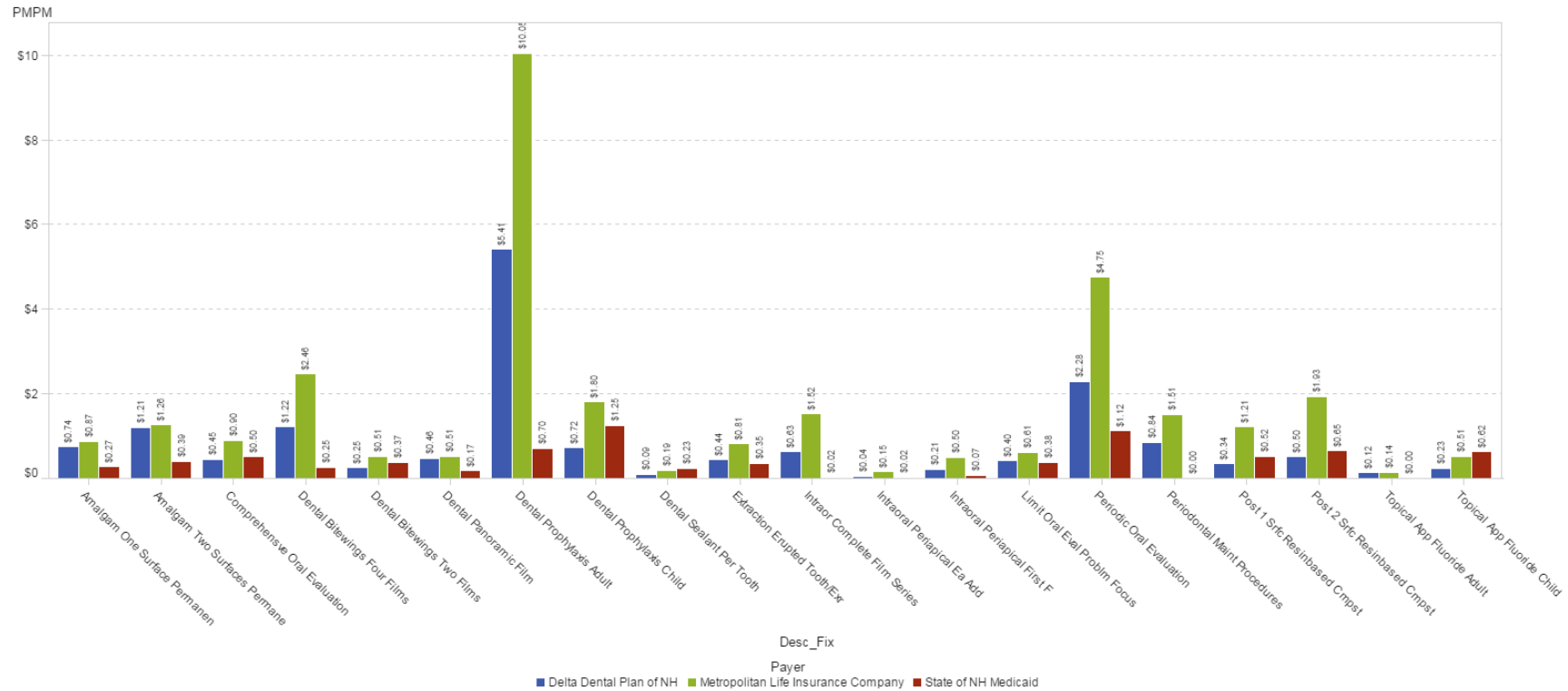
Discussion

The purpose of this project was to demonstrate the utility of the NH CHIS, particularly dental claims data, to inform efforts aimed at improving oral health in the state. The initial step in working with the NH CHIS dental claims data was to apply a quality assurance framework, proven effective in work with NH medical claims data, to NH dental claims. The QA process identified several corrections needed to data submissions. The QA process also showed the dental population in NH to be reasonably stable based on persistency and continuity of members. Nothing in the QA process indicated the data was unstable or in need of extensive follow-up. The stakeholder group was particularly helpful in providing information around incorrectly submitted CDT codes and overall background of the dental claim filing process. The QA process also resulted in several decisions about the underlying data that were put into place for the preliminary analysis (removing small payers and modifying the CDT codes for Metropolitan Life Insurance).

Focusing on the top 9 payers, representations of cost and utilization demonstrate the breadth of knowledge that can be gained from analysis of dental claims data. Project partners helped to develop several key areas for additional understanding that can be supported by further analysis:

- Linking dental and medical claims data – A comprehensive approach to understanding issues related to dental care involves more than the interactions an individual has with a dental provider. Linking an individual's experience across healthcare settings provides valuable insight into, but not limited to, dental and medical care utilization, types of and costs for similar oral health services provided in different settings, oral health services associated with hospitalizations, chronic conditions and comorbidities associated with oral health issues, and prescribing practices related to oral health care. Developing methods to link these data and performing analysis that leverages the linked data sets can be a focus of further work.
- Understanding dental service delivery – The landscape of dental providers, payers, and plans is inherently complex. The stakeholders expressed interest in understanding the impact of benefit structures on cost and utilization patterns, defining episodes of care, understanding dental services with co-occurring claims for anesthesia, and the frequency of preventive services followed by restorative services.
- Provider and population focused analysis – Additional analyses can provide an increased understanding of the oral health needs specific to children, including understanding cost and utilization patterns at more granular age groups, understanding the different service providers and locations commonly used for children for oral health issues, and understanding the use, type, and nature of preventative and restorative oral health services for children in different demographic groups. Additional insight can be gained from analysis focusing on place of service delivery including exploring provider and practice level cost and utilization focusing on differences in private vs. public health settings.

The purpose of this project was to improve the understanding of dental claims data and inform efforts to improve oral health in New Hampshire through quality assurance, analysis, and presentation. The project partners participated in the process through several stakeholder meetings. Continued work with dental claims will increase the current knowledgebase and strengthen support for existing projects and programs focusing on oral health in New Hampshire.

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