COMMONWEALTH OF MASSACHUSETTS
HEALTH POLICY COMMISSION

TECHNICAL APPENDIX B4
REPORT OF THE LEWIN GROUP TO THE HEALTH POLICY COMMISSION

ADDENDUM TO 2013 COST TRENDS REPORT

The Lewin Group®

HEALTHCARE AND HUMAN SERVICES POLICY, RESEARCH, AND CONSULTING—WITH REAL-WORLD PERSPECTIVE.

Trends in Massachusetts Health Care Costs – Analysis of All-Payer Claims Data

Methods and Selected Analyses

Prepared for: The Commonwealth of Massachusetts, Health Policy Commission

Submitted by: The Lewin Group, Inc.

January 22, 2014

Introduction

As part of preparing for its annual report, The Health Policy Commission contracted with The Lewin Group (Lewin) to analyze trends in Massachusetts health care costs, using data from the state's all-payer claims data base (APCD), developed and maintained by the state's Center for Health Information and Analysis (CHIA). The Lewin Group also prepared analytic data files for the HPC to use in its own analysis.

This appendix offers describes the process and methods that Lewin used in its work and presents summary statistics on trends in per-member per-month expenditures.

Background

Working with both the HPC and CHIA, Lewin completed a thorough review of medical claims, enrollee eligibility, and health care provider data from the APCD for calendar years 2009, 2010, and 2011 for commercial as well as public payers, including Medicare and Medicaid (MassHealth). Lewin evaluated the accuracy, completeness and quality of the APCD data for these payers for the three year study period.

Based upon the results of this analysis, the HPC decided to focus this study on medical claims for the three largest commercial payers, Blue Cross Blue Shield of Massachusetts (BCBS), Harvard Pilgrim Health Care (Harvard Pilgrim), and Tufts Health Plan (Tufts), and Medicare. As a result of data limitations, Medicaid data and pharmacy claims could not be included in the study.

Construction of Analytic File

Upon completion of the data validation, Lewin identified the final version of each claim transaction and developed a methodology for determining the total medical expense for the claims for each payer. For Tufts and Harvard Pilgrim, the existing APCD final version logic was adequate. For BCBS, Lewin applied preliminary versioning logic supplied by CHIA.[1] Once the final version of the claim was identified, Lewin then identified and removed the duplicate medical claims.

To compute the total medical expense for comprehensive commercial insurance in Massachusetts, it was also necessary to remove from the APCD data claims and eligibility for Medicare Advantage, Medicare supplemental insurance, other partial products and enrollees that reside outside of Massachusetts. In some cases products were clearly identified as Medicare HMO and could easily be removed. To identify other partial products, all variables in the product table were evaluated for any indication of partial coverage and per member per month (PMPM) medical costs were evaluated by product for reasonableness. Working with CHIA, the three major commercial payers and the HPC, Lewin also compared PMPMs used in

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1 CHIA is working with carriers to finalize the versioning logic and will be releasing results of that work in Release 2.0 of the Massachusetts APCD.

this report to Total Medical Expense (TME) submissions collected by CHIA and reviewed both the methods described above and their results with each major payer.

The final sample for analyses of total spending includes medical claims data from the three major commercial payers and Medicare in 2009-2011. For each of these payers, the sample is limited to individuals who had fee-for-service coverage and were Massachusetts residents.

The commercial sample contains 31.42, 29.00, and 29.01 million (M) member months or 2.62, 2.50, and 2.42M member years, in 2009, 2010, and 2011 respectively, while the corresponding figures for Medicare are 8.96, 9.16, and 9.56M member months or .75, .76, .80M member years. The 2011 sample represents one half of the entire state population.

Analyses of risk scores were limited to individuals who were enrolled with a single carrier for six months in one calendar year; this limitation is necessary for accurate individual scores but leads to disproportionate exclusion of individuals who move out of state, switch payers or products, and die during the year.

Due to data limitations, spending variables do not capture pharmacy costs, payments outside the claims system, or Medicare cost-sharing. In 2011 in Massachusetts, medical claims represented 73 percent of commercial total medical expenditures; while pharmacy claims and non-claims payments represented 16 percent and 6 percent respectively.[2] In 2012 for the nation as a whole, medical claims again represented 87 percent of Medicare spending for FFS beneficiaries, while pharmacy claims made up the remaining 13 percent; figures on payments outside the claims system are not readily available, but these payments were likely minimal during the study period.[3] The Medicare cost-sharing rate is typically 20 percent.

Analytic Approach and Methods

The primary level of analysis was the person, specifically per member per month (PMPM) expenditures. The HPC and the Lewin group examined PMPM spending along several dimensions: normalized spending, relative price paid, and patient risk, all of which are defined in **Exhibit 1** below.

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[2] CHIA, Annual Report on the Massachusetts Health Care Market, August 2013. http://www.mass.gov/chia/docs/r/pubs/13/ar-ma-health-care-market-2013.pdf. “Other” payments represented 5 percent of TME.

[3] Congressional Budget Office, Medicare Baseline, February 2013.

Exhibit 1: Definition of Terms

Term	Definition
Total spending (Observed spending)	Total spending on covered services by both plan and member. Usually based on allowed charges.[4]
Normalized spending (Standardized $)	A standardized measure of spending that does not vary by payer, provider, or time period. In effect, a measure of the intensity of service for a patient or episode. This measure is calculated by re-pricing all services using a standard fee schedule.
Relative price paid	A composite price measure that complements normalized spending and reflects price variation due to differences among payers, providers, and time periods. This measure is calculated as: (Spending for all services at prices paid) / (Spending for all services priced using a standard fee schedule). As a result: **Total spending = normalized spending * relative price paid.**
Patient risk score	A measure of a patient's expected need for health care services due to demographic and clinical characteristics. Normalized to one and so that a one percent increase is risk score corresponds to a one percent increase in expected spending.

Total Spending

To measure the total cost of commercial insurance claims in the sample , Lewin summarized both plan and member payment to providers This information was obtained directly from the final version of the claim and does not include any additional adjustment by Lewin or the HPC for completion or inflation. Patient contributions were not available for all Medicare claims, therefore the Medicare paid amount was used for our analyses. Per member per month (PMPM) calculations made using this information are referred to as the "Observed PMPM". All services recorded in the claim data were included in the analysis. Exhibits 2, 3, and 5 describe the results of the spending analyses.

Normalized Spending

To isolate the effect of changing payment rates, Lewin re-priced all commercial and Medicare claims using Optum Normalized Pricing. This software assigns each claim a new, nationally representative price calibrated to 2011. As a result, changes in the normalized PMPM reflect changes in the mix of services and utilization but not changes in contracted rates or time period.

To re-price claims, Optum Normalized Pricing uses a methodology specific to each type of claim. Physician and ancillary services are re-priced using values from the Medicare fee schedule that are adjusted to be comparable to commercial rates. Relative values for services not valued by the Medicare fee schedule are derived from national averages computed from Optum's benchmark database.

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[4] Due to data limitations, Medicare spending includes spending paid by the plan only.

Inpatient claims are priced using the diagnosis information present on the claim and assigning a rate per day from an internal reference database. The rate is specific to the diagnosis category (e.g., central nervous system, cardiac, maternity, trauma, etc.), presence of major surgery, rehab/SNF admission, and length of stay.

Outpatient claims were re-priced using a multi-step process that assigns national averages using first the procedure code then, if no match is found, the average price per revenue code is used. Commercial and Medicare claims were both re-priced using the same methodology.

Results are shown in Exhibits 4 and 6.

Risk Scores

To determine if observed differences in costs between time periods or patient groups were due to differences in the health status of enrollees, Lewin processed the APCD claims data through the Symmetry Episode Risk Group (ERG) risk adjustment grouper. The ERG grouper evaluates diagnosis codes on medical claims to identify the chronic and acute conditions present for each enrollee that have a material impact on health care costs. Condition specific risk scores and an age/gender risk score are then summed for each enrollee. The ERG risk scores were developed using a national database of commercial health care claims and were calibrated so the average enrollee has a risk score equal to 1.0. A minimum six month period of eligibility was utilized to help ensure that the observed risk scores were truly reflective of the health status of an enrollee. Many new enrollees with one or two months of eligibility during a year have risk scores that understate their health status because they did not receive treatment for all of their clinical conditions and diagnoses for these conditions were not reported on health care claims. For enrollees that met the minimum eligibility requirement risk scores were computed for all commercial and Medicare enrollees for 2009, 2010 and 2011. Exhibit 7 reports risk scores by payer for the study period.

Trends in Total Spending

Exhibit 2 Trends in Commercial Claims-Based Medical Spending and Enrollment, CY 2009-2011

	Year			Rate of Change	
	2009	2010	2011	2009-2010	2010-2011
Commercial Expenditures					
Member Months	31,424,000	29,994,000	29,007,000	-4.6%	-3.3%
Claims Payments	$10,001,000,000	$9,953,000,000	$9,903,000,000	-0.5%	-0.5%
PMPM	$318	$332	$341	4.3%	2.9%
Commercial Out Of Pocket Expenditures					
Member Months	31,424,000	29,994,000	29,007,000	-4.6%	-3.3%
Member Payments	$579,000,000	$655,000,000	$678,000,000	13.1%	3.5%
PMPM	$18	$22	$23	18.5%	7.0%

Source: The Lewin Group analysis of medical claims data from the Massachusetts's All-Payer Claims Database, three major commercial carriers.

Exhibit 3 Commercial Trends in Out-of-Pocket Expenditures by Level, CY 2009-2011

Out-of-Pocket Spending Level		<$500	>$500 and <$1,000	>$1,000 and <$,2000	>$2,000 and <$5,000	>$5,000
2009	Number of Members	2,778,815	195,308	101,926	20,351	832
	Percent of Members	90%	6%	3%	1%	0.03%
2010	Number of Members	2,591,045	225,197	123,737	30,581	883
	Percent of Members	87%	8%	4%	1%	0.03%
2011	Number of Members	2,471,581	224,616	130,464	39,580	1,258
	Percent of Members	86%	8%	5%	1%	0.04%

Source: The Lewin Group analysis of medical claims data from the Massachusetts's All-Payer Claims Database, three major commercial carriers.

Exhibit 4 Commercial Observed and Normalized PMPM Rates of Change, CY 2009-2011

	Observed PMPM	Normalized PMPM	Relative Price Paid*
Average annual rate of change 2009-2011	3.6%	-1.9%	5.6%

*Observed PMPM / normalized PMPM. The change in relative price paid is measured in nominal terms.

Source: The Lewin Group analysis of medical claims data from the Massachusetts's All-Payer Claims Database, three major commercial carriers.

Exhibit 5 Trends in Medicare Claims-Based Medical Spending and Enrollment, CY 2009-2011

	Year			Rate of Change	
	2009	2010	2011	2009-2010	2010-2011
Member Months	8,955,000	9,157,000	9,556,000	2.3%	4.4%
Claims Payments	$8,002,000,000	$8,386,000,000	$8,876,000,000	4.8%	5.8%
PMPM	$894	$916	$929	2.5%	1.4%

Source: The Lewin Group analysis of medical claims data from the Massachusetts's All-Payer Claims Database, Medicare FFS.

Exhibit 6 Medicare Observed and Normalized PMPM Rates of Change CY 2009-2011

Rate of Change	Observed PMPM	Normalized PMPM	Relative Price Paid*
Average annual rate of change 2009-2011	2.0%	1.3%	0.6%

* Observed PMPM / normalized PMPM. The change in relative price paid is measured in nominal terms.

Source: The Lewin Group analysis of medical claims data from the Massachusetts's All-Payer Claims Database, Medicare FFS.

Note: From 2009 to 2011 Medicare observed PMPMs grew at a slower rate than normalized PMPMs in some service categories, indicating a decline in prices. For some services, the observed Medicare prices reported on claims decline over time, although the reasons are not always apparent. In particular, professional services provided in an institutional setting and home health prices decline in our study period. For professional services provided in an institutional setting, the prices paid by Medicare in 2010 were often higher than those reported by the CMS Physician Fee Schedule[5]. The 2011 prices for the same CPT codes better matched the fee schedule and were lower than in 2010. The HPC and Lewin plan to investigate further.

[5] Centers for Medicare and Medicaid Services Physician Fee Schedule Retrieved from http://www.cms.gov/apps/physician-fee-schedule/search/search-criteria.aspx on 12/10/13

Exhibit 7 Commercial and Medicare Risk Score by Year, CY 2009-2011

	2009	2010	2011	Rate of Change: 2009-2010	Rate of Change: 2010-2011	Rate of Change: 2009-2011 Average annual rate of change
Commercial						
Enrollees	2,696,698	2,564,231	2,484,464	-4.9%	-3.1%	-4.0%
Average Risk Score	1.16	1.17	1.13	0.9%	-3.4%	-1.3%
Medicare						
Enrollees	752,968	770,989	803,992	2.4%	4.3%	3.3%
Average Risk Score	4.44	4.45	4.47	0.2%	0.5%	0.3%

Source: The Lewin Group analysis of medical claims data from the Massachusetts's All-Payer Claims Database, three major commercial carriers and Medicare FFS.