

COMMONWEALTH OF MASSACHUSETTS
HEALTH POLICY COMMISSION



TECHNICAL APPENDIX B2
TRENDS IN SPENDING AND CARE DELIVERY

ADDENDUM TO 2014 COST TRENDS REPORT

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1 Out of pocket expenses

This section describes the Health Policy Commission's (HPC) approach to measuring out of pocket spending in Massachusetts.

1.1 Sample

We used the Massachusetts' All Payer Claims Database (APCD) for calendar years 2012 for our analysis. Our sample included data from the three major commercial payers, Blue Cross Blue Shield, Harvard Pilgrim Health Plan, and Tufts Health Plan. Enrollees with missing age and gender were dropped from our dataset. Members with negative expenditures and negative income levels were not included in our study. Expenditures do not capture pharmacy costs or payments outside the claims system.

In our study, out of pocket expense includes copay, coinsurance and deductible.

1.2 Analysis

1.2.1 Definition of out of pocket expenses

Out of pocket expense includes copay, coinsurance and deductible. Premiums and pharmacy expenses are excluded.

1.2.2 Definition of insurance types

Insurance types were exclusive provider organization, health maintenance organization, indemnity insurance, point of service, and preferred provider organization.

1.2.3 Definition of clinical conditions

To determine each patient's clinical conditions, we used Optum's Symmetry Episode Risk Group (ERG) risk adjustment grouper. The ERG grouper evaluated diagnosis codes on medical claims (2012 for Top 3 Commercial payers) to identify the chronic and acute conditions that were present for each enrollee and that typically have a material impact on health care costs. The data output included indicators for the presence of 34 clinical conditions.

Working together with clinical consultants, we refined Optum's ERG clinical conditions into 17 chronic conditions (arthritis, asthma, child psychology, blood, diabetes, epilepsy, glaucoma, cardiology, HIV/AIDS, hyperlipidemia, hypertension, mental health, multiple sclerosis (MS) and ALS (amyotrophic lateral sclerosis), psychiatric disorders, renal failure, mood disorders, and substance abuse). We categorized five of these conditions as behavioral health (child psychology, mental health, psychiatric disorders, mood disorders and substance abuse) and the remainder as chronic medical.

1.2.4 Definition of episodes of care

To identify the largest variance in health care costs across specific episodes of care, the Optum Symmetry Episode Treatment Grouper was used to group claims into unique episodes of care. Episode Treatment Groups (ETGs) are medically meaningful statistical units representing complete episodes of care. These episodes describe a recipient's observed mix of diseases and

conditions, and any underlying co-morbidities and complications. ETGs combine medical and pharmacy service data to produce mutually exclusive and clinically homogenous categories. Because the available pharmacy dataset is incomplete, these analyses did not include pharmacy claims.

For chronic conditions, the time period for an episode of care is defined as the full calendar year (i.e., the begin date is January 1 and the end date is December 31). For other conditions, the begin date is the first day of care after a clean period, and the end date is the last day of care before a clean period. A clean period is defined as one with no indication of treatment for the condition. As a result, some episodes span calendar years, in which case total spending includes spending that occurs during the calendar year only, and the episode count includes partial episodes.

Working together with clinical consultants, we grouped these episodes of care into 6 categories, acute illness, behavioral health, cancer/malignancy, chronic conditions, pregnancy or birth related, and routine/prevention.

Out of pocket spending by episodes of care, 2012

All patients

	Total spending	Out of pocket spending	% out of pocket
Acute Illness	\$3,148,252,871	\$301,123,838	10%
Behavioral health conditions	\$691,907,928	\$98,730,536	14%
Cancer/Malignancy	\$1,032,359,205	\$25,709,097	2%
Chronic medical conditions	\$2,779,384,703	\$185,678,496	7%
Pregnancy or Birth-Related	\$684,049,318	\$23,494,968	3%
Routine/Prevention	\$473,059,196	\$18,099,871	4%
Total – selected episode types	\$8,809,013,220	\$652,836,805	7%

Patients with >= \$1,000 in total spending

	Total spending	Out of pocket spending	% out of pocket
Acute Illness	\$2,948,079,478	\$261,850,675	9%
Behavioral health conditions	\$656,292,122	\$91,785,863	14%
Cancer/Malignancy	\$1,023,258,400	\$25,072,113	2%
Chronic medical conditions	\$2,683,238,815	\$170,529,432	6%
Pregnancy or Birth-Related	\$680,255,553	\$23,241,144	3%
Routine/Prevention	\$344,315,904	\$13,570,249	4%
Total – selected episode types	\$8,335,440,272	\$586,049,477	7%

Patients with >=\$10,000 in total spending

	Total spending	Out of pocket spending	% out of pocket
Acute Illness	\$1,546,127,691	\$65,334,884	4%
Behavioral health conditions	\$318,084,693	\$25,954,931	8%
Cancer/Malignancy	\$939,859,870	\$15,457,883	2%
Chronic medical conditions	\$1,891,111,031	\$61,122,027	3%
Pregnancy or Birth-Related	\$583,333,887	\$18,104,812	3%
Routine/Prevention	\$53,060,359	\$1,664,782	3%
Total – selected episode types	\$5,331,577,530	\$187,639,320	4%

Note: Out of pocket expense includes copay, coinsurance and deductible.

Source: HPC analysis of Massachusetts All Payer Claims Database (payers include Blue Cross Blue Shield, Harvard Pilgrim Health Care, and Tufts Health Plan), 2012

2 Occupancy rates, FY2009-FY2012

The hospital occupancy rates are calculated based on daily census divided by staffed beds. Rates are calculated as a simple average of hospital occupancy rates due to the lack of detailed patient volume data in which to perform a weighted calculation. Academic Medical Center rates are not included in the Major Teaching Hospital rate.