

**COMMONWEALTH OF MASSACHUSETTS
HEALTH POLICY COMMISSION**



**TECHNICAL APPENDIX B2
OVERVIEW OF TRENDS IN SPENDING AND CARE
DELIVERY**

ADDENDUM TO 2016 COST TRENDS REPORT

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1 Summary

This section describes the Health Policy Commission's (HPC) approach to the analyses contained in **Chapter 2: "Overview of Trends in Spending and Care Delivery"** of the 2016 Cost Trends Report.

2 Out-of-pocket expenses

2.1 Data

The HPC used the Massachusetts All Payer Claims Database (APCD) for calendar years 2012-2014. The APCD includes commercially-insured Massachusetts residents enrolled in a comprehensive individual or group medical plan offered by one of the three major commercial payers: Blue Cross Blue Shield of Massachusetts, Harvard Pilgrim Health Care, and Tufts Health Plan. Expenditures calculated using the APCD do not capture payments outside the claims system. The HPC used the American Community Survey (ACS) from the U.S. Census Bureau to match median household income and household counts to ZIP code tabulation areas (ZCTAs) in Massachusetts. For more information on these sources, see **Technical Appendix C: "Data Sources."**

2.2 Definitions

Out-of-pocket expenses include copays, coinsurance, and deductibles.

Spending was calculated using the allowed amount indicated on the claim, which includes payments made by the insurer and the patient (out-of-pocket expenses).

ZCTAs are ranked by median household income weighted by household counts using data from the ACS from 2012. Lowest income areas are defined as the bottom quartile of ZCTAs by median household income (ZCTAs with median household incomes equal to or below \$51,563). Highest income areas are defined as the top quartile of ZCTAs by median household income (ZCTAs with median household incomes equal to or above \$85,150).

2.3 Analysis

Using the medical and pharmacy claims of the APCD, the HPC calculated total spending and total out-of-pocket expenses for full-year commercial members in 2014. Inclusion in the analysis was conditional on having non-zero spending (allowed amounts) for the year, in order to be captured in the APCD. Claims with missing allowed amounts were excluded. **Exhibit 2.7** in the Report shows the distribution of out-of-pocket expenses for individuals in the lowest and highest income areas of Massachusetts, as defined above. Additionally, average out-of-pocket spending was calculated for the lowest and highest income areas.

3 Nursing facility quality

3.1 Data

The HPC used data from CMS Nursing Home Compare (NHC) updated in December 2016 for 411 nursing homes in Massachusetts licensed by the Massachusetts Department of Public Health's Division of Health Care Facility Licensure and Certification that received a rating from NHC on a five star scale in 2016. The HPC used the American Community Survey (ACS) from the U.S. Census Bureau to match median household income and household counts to zip codes in Massachusetts. For more information on these sources, see **Technical Appendix C: "Data Sources."**

3.2 Definitions

Quintiles were constructed by arranging nursing facilities by median zip code household income and dividing the facilities into five roughly equal groups. The quintiles used here are not true income quintiles for the state, but only for zip codes that contain nursing facilities. Facilities in zip codes with median household incomes under \$48,700 were in quintile 1; \$48,700- \$63,000 in quintile 2; \$63,001-77,420 in quintile 3; \$77,421-\$93,000 in quintile 4; and above \$93,000 in quintile 5.

3.3 Analysis

Nursing home quality by income

To produce average star ratings, the HPC multiplied the number of facility beds by the respective star ratings of facilities within each quintile and divided by the total number of beds within each quintile.

Nursing facility quality by region

The HPC used ACS data to match nursing home zip codes to regions of the state. HPC added the number of beds in facilities that had earned a 4 or 5 star rating in each region, and divided by the total stock of nursing home beds located in each region.