

**COMMONWEALTH OF MASSACHUSETTS**  
**HEALTH POLICY COMMISSION**

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**TECHNICAL APPENDIX B1**  
**TRENDS IN SPENDING AND CARE DELIVERY**

**ADDENDUM TO 2019 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 2019 Cost Trends Report.

## 2 Allocation of the increase in monthly compensation between 2016 and 2018 for a median Massachusetts family with health insurance through an employer

This estimate combined data from a number of publicly available data sources and assumptions as described below.

*Increases in health insurance spending:* First, we used estimates of average family premiums in Massachusetts in 2016 and 2018 from the Medical Expenditure Panel Survey (MEPS)— income component. The data also subdivides that premium spending into the employee and employer contributions. We derived out of pocket spending on health care by applying the ratio of out of pocket spending to premium spending estimated via the databooks available in CHIA's Annual Reports for the relevant years and applying this ratio to the family premium data from the Medical Expenditure Panel Survey (MEPS).

*Income:* We used the estimate of median family income from the American Community Survey's one-year data tables for the state of Massachusetts. We used family income rather than household income because the family unit more closely corresponds to the unit that would obtain a family health insurance policy. We then add the employer contribution amount from the MEPS to family income to arrive at a measure of total compensation as our denominator.

*Taxes:* We estimated taxes paid by assuming that out of pocket spending and income is taxable but employer and employee premium contributions are not. Because our analysis focused on the allocation of income *gains* rather than all income devoted to health care, we applied marginal tax rates rather than average tax rates, assuming a marginal income tax rate of 22% (using tax tables for income in this range), a payroll tax rate of 7.65%, and a state tax rate (Massachusetts) of 5.05%.

## 3 Characteristics of middle-class families (“high-burden”) with employer-based health insurance that spend more than a quarter of earnings on health care, 2016-18 average

### 3.1 Data

The HPC used data from the Current Population Survey’s Annual Social and Economic Supplement (ASEC; 2016-2018)—a survey of 75,000 households annually that covers social and economic characteristics of persons, families and the entire household. The ASEC is the source of official national estimates of poverty levels and rates and of widely used measures of income, and provides weights for sub-national analyses. Supplemental data on premium contributions come from the Agency for Healthcare Research and Quality’s Medical Expenditure Panel Survey (MEPS; 2016-2018). For more information on these sources, see **Technical Appendix D: “Data Sources.”**

### 3.2 Exclusions

For this analysis, the HPC made the following exclusions:

- Families where the main householder (“reference person”) or their spouse was 65 years old or over
- Families where the main householder (“reference person”) was actively in the Armed forces or families were housed in group quarters
- Families without employer-sponsored insurance
- Non-family households
- Non middle-class families (based on occupational prestige scores)

### 3.3 Definitions

Estimates are based on three-year averages for middle class families from 2016 to 2018:

- A “family” is defined as the primary family only. However, the ASEC does distinguish and provide separate estimates for households (primary family and any related sub-families) and families (primary family only).
- “Middle class” family definition is based on General Social Survey (GSS) occupational prestige scores. This measure is not solely income-based. This measure, the SEI10, is from the 2010 Socioeconomic Index of the General Social Survey (GSS) and was developed using a combination education and income to predict the prestige of Standard Occupational Classification (SOC) codes. The most recent version was released with the 2010 General Social Survey and included prestige scores for 539 occupations.
- “High-burden” families were those whose total spending on healthcare (premiums, over-the-counter and other out-of-pocket spending) exceeded 25% of their total compensation.

- Total compensation includes both family income and employer contribution to health care premiums. Family-level income was estimated by pooling three years of ASEC data with associated sample weights. Employer contribution came from the MEPS and represented an average of contributions for firms in the bottom three wage-quartiles.
- Premiums include employer and employee premium contributions from the MEPS.
- Disability or activity limitation was defined as difficulty walking or climbing stairs, dressing or bathing, hearing, seeing, or having a health problem or a disability which prevents work or limits the kind or amount of work they can perform.
- College degree was defined as having a B.A. or higher degree in the family.
- Single-parent families are those in families who did not report being in a married couple family (male or female reference person).
- Worse health was defined as those reporting a health status “poor,” “fair” or “good.”