

COMMONWEALTH OF MASSACHUSETTS
HEALTH POLICY COMMISSION



TECHNICAL APPENDIX C
DATA SOURCES

ADDENDUM TO 2016 COST TRENDS REPORT

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1 Summary

This technical appendix lays out the data sources used by the Health Policy Commission (HPC) in the 2016 Cost Trends Report.

2 Agency for Healthcare Research and Quality

2.1 Nationwide Inpatient Sample (NIS)

Year(s) of data used: 2012-2013

Description of data: The Healthcare Cost and Utilization Project (HCUP) is a family of databases and related software tools and products developed through a Federal-State-Industry partnership and sponsored by AHRQ. HCUP databases are derived from administrative data and contain encounter-level, clinical and nonclinical information including all-listed diagnoses and procedures, discharge status, patient demographics, and charges for all patients, regardless of payer (e.g., Medicare, Medicaid, private insurance, uninsured). The HCUP databases are based on the data collection efforts of organizations in participating States that maintain statewide data systems and are Partners with AHRQ. The Nationwide Inpatient Sample (NIS) is the largest publicly available all-payer hospital inpatient care database in the United States. Researchers and policymakers use NIS data to identify, track, and analyze trends in health care utilization, access, charges, quality, and outcomes.

Available from: <http://www.hcup-us.ahrq.gov/nisoverview.jsp>

2.2 State Inpatient Database (SID)

Year(s) of data used: 2012-2013

Description of data: The State Inpatient Database (SID) is part of HCUP's family of databases, briefly described above. SID captures hospital inpatient stays in a given State. The SID files encompass all patients, regardless of payer, providing a unique view of inpatient care in a defined market or State over time. The SID contains the universe of the inpatient discharge abstracts in participating States, translated into a uniform format to facilitate multi-State comparisons and analyses.

Available from: <https://www.hcup-us.ahrq.gov/sidoverview.jsp>

2.3 Medical Expenditure Panel Survey (MEPS)

Year(s) of data used: 2005-2015

Description of data: The Medical Expenditure Panel Survey is an annual survey containing detailed information on health care expenditures, insurance, and health status conducted by the Agency for Healthcare Research and Quality. The survey has two components: an individual household survey and a survey of employers (the Insurance Component). The survey makes data

available via pre-populated tables. For this report, we use the Insurance Component tables for private sector establishments that offer family coverage to their employees – the tables are series II.D.1 within the “State and metro area tables” and can be found at the URL below. We use average premiums for all firm sizes.

Available from: http://meps.ahrq.gov/mepsweb/data_stats/quick_tables.jsp

3 Center for Health Information and Analysis

Description of source: In 2012, the Massachusetts Legislature passed Chapter 224 of the Acts of 2012 (Chapter 224), *An Act Improving the Quality of Health Care and Reducing Costs Through Increased Transparency, Efficiency and Innovation*. Chapter 224 created the Center for Health Information and Analysis (CHIA) to monitor the Massachusetts health care system and to provide information to support improvements in quality, affordability, access, and outcomes. In this Annual Report and in other reports in the Health System Performance series, CHIA provides statistics and analysis to support these goals.

3.1 Annual Report on the Performance of the Massachusetts Healthcare System

Year(s) of data used: 2009-2016

Description of data: Detailed data on spending and trends for the several years including Total Medical Expenses, Total Health Care Expenditures, and other data are included with CHIA’s 2015 annual report and supplemental data books.

Available from:

Annual Report: <http://www.chiamass.gov/assets/2016-annual-report/2016-Annual-Report-rev-1.pdf>

Annual Report supplemental materials: <http://www.chiamass.gov/annual-report/>

3.2 Annual Report on the Performance of the Massachusetts Healthcare System- APM Databook

Year(s) of data used: 2012-2016

Description of data: CHIA's 2016 annual report on the performance of the healthcare system examines APM coverage in the Massachusetts commercial market, compares 2015 and previous years' coverage rates, and examines types of alternative payment methods in use.

Available from: <http://www.chiamass.gov/chia-standard-statistics/>

Method Report: <http://www.chiamass.gov/assets/docs/r/pubs/15/apm-methodology-paper.pdf>

Databook: <http://www.chiamass.gov/annual-report/>

In 2015, CHIA collected supplemental APM data on the extent to which global budgets included some downside risk. CHIA currently plans to continue to collect this data in future years as part of the standard APM data collection.

3.3 Annual Report on the Performance of the Massachusetts Healthcare System - Total Medical Expenses

Year(s) of data used: 2009 - 2016

Description of data: Total Medical Expenses (TME) represent the full amount paid to providers for health care services delivered to a payer's covered enrollee population (payer and enrollee cost-sharing payments combined). TME covers all categories of medical expenses and all non-claims related payments to providers, including provider performance payments. On an annual basis, the 10 largest commercial payers file TME reports with the Center for Health Information and Analysis (CHIA).

Available from (databook): <http://www.chiamass.gov/annual-report/>

3.4 All-Payer Claims Database

Year(s) of data used: 2011-2014

Description of data: The Massachusetts All-Payer Claims Database (APCD) is an essential resource with which researchers can examine health care spending and the evolution of health care and health insurance markets. The APCD contains medical, pharmacy, and dental claims from all payers that insure Massachusetts residents, as well as information about members, insurance products, and provider characteristics. It does not include payments that occur outside of the claims system, such as supplemental payments related to quality incentives or alternative payment methods, nor does it include self-pay spending that consumers incur outside of their insurance coverage.

The HPC used an analytic data set that consisted of claims for the state’s Medicare Fee-For-Service beneficiaries and three largest commercial payers – Blue Cross Blue Shield of Massachusetts (BCBS), Harvard Pilgrim Health Care (HPHC), and Tufts Health Plan (THP) – who represent 80 percent of the commercial market. Medicare claims analyses do not include expenditures by Medicare Advantage enrollees. Our analyses incorporated claims-based medical expenditures for Medicare and commercial payers, but not pharmacy spending, payments made outside the claims system, or MassHealth spending. Examination of APCD data from MassHealth is ongoing, and MassHealth claims analyses will be included in future work by the Commission.

Available from: <http://www.chiamass.gov/ma-apcd/>

3.5 Massachusetts Acute Hospital Case Mix Database

Description of source: The Massachusetts Acute Hospital Case Mix Database is a database comprised of:

- Inpatient Discharge Database
- Outpatient Observation Database
- Emergency Department Database

Acute Hospital Case Mix data includes case specific, diagnostic discharge data that describe socio-demographic characteristics of the patient, the medical reason for the admission, treatment and services provided to the patient, the duration and status of the patient's stay in the hospital, and the full, undiscounted total and service-specific charges billed by the hospital to the general public.

This patient-level data supports the analyses of such issues as preventable hospitalizations, hospital market analysis, alternative care settings, the patient care continuum, and comparative costs and outcomes in acute care hospitals.

In this report, we used the Hospital Inpatient Discharge Database and Emergency Department Database for our analyses.

Hospital Inpatient Discharge Database

Year(s) of data used: 2011-2015

Description of data: The Hospital Inpatient Discharge Database (HIDD) contains comprehensive patient-level information including socio-demographics, clinical data, and charge data. It is used to establish reasonable and adequate rates, to enable hospitals to be grouped for comparing costs, to assist in the formulation of health care delivery and financing policy, and to assist in the provision and purchase of health care services.

Emergency Department Database

Year(s) of data used: 2011-2015

Description of data: The Outpatient Emergency Department (ED) Database contains patient demographics, clinical characteristics, services provided, charges, and hospitals and practitioner information, as well as mode of transport. The report uses data from all Massachusetts residents who visited an acute hospital Emergency Department site from the fiscal year 2010 to the fiscal year 2014.

Available from: <http://www.chiamass.gov/case-mix-data/>

3.6 Quality and Patient Safety

Year(s) of data used: 2016

Description of data: CHIA uses quality measures and data that are highly credible and widely used across the industry. Data are sourced from other government agencies, private organizations and from CHIA's Case Mix database.

CHIA's *A Focus on Provider Quality* report, which is part of CHIA's Performance of the Massachusetts Health Care System Series, summarizes performance on measures of potentially unnecessary care, patient experience, patient safety, and care coordination. CHIA measures the quality of care provided in the state using the Commonwealth's Standard Quality Measure Set (SQMS)

Available from: <http://www.chiamass.gov/quality/>

Report: <http://www.chiamass.gov/quality-of-care-in-the-commonwealth-from-the-2016-performance-of-the-massachusetts-health-system-report/>

3.7 Massachusetts Health Insurance Survey

Year(s) of data used: 2015

Description of data: The Massachusetts Health Insurance Survey (MHIS) provides information on health insurance coverage, health care access and use, and health care affordability for Massachusetts residents as part of CHIA's Continuing Study on Insurance Coverage, Underinsurance and Uninsurance.

The MHIS is a tool used by CHIA, legislators, policymakers, employers, insurers and other stakeholders to track and monitor the experiences of Massachusetts residents in obtaining timely and affordable health care. While national data sources can help to monitor some aspects of health insurance coverage and health care access, this survey provides the ability to track issues

that are specific to Massachusetts. The MHIS additionally enables CHIA to track key populations that are of particular interest to the Commonwealth. The 2015 MHIS was fielded between May and August 2015.

Available from: <http://www.chiamass.gov/massachusetts-health-insurance-survey/>

3.8 Enrollment Trends

Year(s) of data used: 2012-2015

Description of data: Enrollment Trends monitors health insurance coverage in the Commonwealth of Massachusetts, where coverage is defined by unique Massachusetts residents in primary, medical membership within the top 16 commercial payers and, to the extent data allow, within MassHealth (Medicaid) and Medicare. Enrollment Trends is produced using the Massachusetts All-Payer Claims Database (MA APCD), supplemented with payer-reported data (where needed), and data from MassHealth, the Massachusetts Health Connector, and the Centers for Medicare and Medicaid Services (CMS).

In producing enrollment trends, CHIA uses the MassHealth enrollment snapshot, which includes MassHealth enrollment by benefit type and demographic category. The snapshot report is produced by the MassHealth Budget Office.

Available from: <http://www.chiamass.gov/enrollment-in-health-insurance>

3.9 Relative Price

Year(s) of data used: 2009-2016

Description of data: Relative Price (RP) is a calculated measure that compares different provider prices within a payer's network for a standard mix of insurance products (e.g. HMO, PPO, and Indemnity) to the average of all providers' prices in that network. RP data is submitted annually to CHIA by commercial and public payers.

Payer data submissions are not available as a public record.

4 Centers for Medicare & Medicaid Services

4.1 National Health Expenditures Accounts

Year(s) of data used: 2009-2015

Description of data: The National Health Expenditures Accounts aim to quantify the complete set of health expenditures in the U.S. in a comprehensive, multidimensional, and consistent way. Health spending is measured in a comprehensive yet mutually exclusive structure to allow accounting for the full set of spending, for example, by payer and/or by service category. The data presented in this report as health expenditures derive primarily from the subset called Personal Health Expenditures

(which exclude some health spending such as public health and research spending) and, in some cases, from the further subset of those expenditures that are paid for via private health insurance. The sources CMS uses to build this dataset include the U.S. Census Bureau, the American Medical Association, the American Hospital Association and IMS as well as household data from surveys such as the National Medical Care Expenditure Survey (National Center for Health Services Research, 1987) and later, the Medical Expenditure Panel Survey-Household Component (Agency for Healthcare Research and Quality, 1996-2006 and 2009-2012).

Available from: <http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/index.html?redirect=/NationalHealthExpendData/>

4.2 Medicare Shared Savings Program and Accountable Care Organization Performance

Year(s) of data used: 2014-2016

Description of data: These data sets present data on enrollment, finances, and quality performance results for Medicare Shared Savings Programs and Accountable Care Organizations (ACOs).

Available from:

Medicare shared savings program results: <https://data.cms.gov/ACO/Medicare-Shared-Savings-Program-Accountable-Care-O/x8va-z7cu/data>

Pioneer program results: <http://innovation.cms.gov/initiatives/Pioneer-aco-model/>

4.3 Hospital Compare

Year(s) of data used: 2015

Description of data: Hospital Compare is part of the Centers for Medicare & Medicaid Services (CMS) Hospital Quality Initiative. The Hospital Quality Initiative uses a variety of tools to help stimulate and support improvements in the quality of care delivered by hospitals. The intent is to help improve hospitals' quality of care by distributing objective, easy to understand data on hospital performance, and quality information from consumer perspectives.

Available from: <http://www.medicare.gov/hospitalcompare/search.html>

5 Health Policy Commission

5.1 Material Change Notices

Year(s) of data used: 2013-2016

Description of data: In 2012, the Massachusetts Legislature passed Chapter 224 of the Acts of 2012 (Chapter 224), *An Act Improving the Quality of Health Care and Reducing Costs Through Increased Transparency, Efficiency and Innovation*. Chapter 224 directs the HPC, in part, to monitor the Massachusetts health care system by requiring health care providers and provider organizations to notify the HPC before making material changes to their operations or governance structure. Pursuant to M.G.L. c. 6D, § 13, the HPC tracks the frequency, type, and nature of changes in the health care marketplace.

Material Changes are defined as the following types of proposed changes involving a Provider or Provider Organization:

- (1) A Merger or affiliation with, or Acquisition of or by, a Carrier;
- (2) A Merger with or Acquisition of or by a Hospital or hospital system;
- (3) Any other Acquisition, Merger, or affiliation (such as a Corporate Affiliation, Contracting Affiliation, or employment of Health Care Professionals) of, by, or with another Provider, Providers (such as multiple Health Care Professionals from the same Provider or Provider Organization), or Provider Organization that would result in an increase in annual Net Patient Service Revenue of the Provider or Provider Organization of ten million dollars or more, or in the Provider or Provider Organization having a near-majority of market share in a given service or region;
- (4) Any Clinical Affiliation between two or more Providers or Provider Organizations that each had annual Net Patient Service Revenue of \$25 million or more in the preceding fiscal year; provided that this shall not include a Clinical Affiliation solely for the purpose of collaborating on clinical trials or graduate medical education programs; and
- (5) Any formation of a partnership, joint venture, accountable care organization, parent corporation, management services organization, or other organization created for administering contracts with Carriers or third-party administrators or current or future contracting on behalf of one or more Providers or Provider Organizations.

Available from: <http://www.mass.gov/anf/budget-taxes-and-procurement/oversight-agencies/health-policy-commission/material-change-notices-cost-and-market-impact-reviews/>

5.2 Massachusetts' 2016 Cost Trends Hearing

Year(s) of data used: 2016

Description of data: As part of Massachusetts government's commitment to health care cost containment, annual cost trend hearings have been held since 2010. The hearings examine health care provider, provider organization and private and public health care payer costs, prices and cost trends, with particular attention to factors that contribute to cost growth within the

Commonwealth's health care system. Prior to these public hearings, a sample of payers and providers are identified from across Massachusetts to submit written testimony ("Pre-filed testimony") in response to questions from the Attorney General Office (AGO), the Center for Health Information and Analysis (CHIA) and beginning in 2013, the Health Policy Commission (HPC). At these hearing, public agencies and industry experts also asked to present on the focus areas within the health care sector.

Available from:

Pre-filed testimony: <http://www.mass.gov/anf/budget-taxes-and-procurement/oversight-agencies/health-policy-commission/annual-cost-trends-hearing/2016/testimony.html>

Cost Trends Hearing presentations and resources: <http://www.mass.gov/anf/budget-taxes-and-procurement/oversight-agencies/health-policy-commission/annual-cost-trends-hearing/2016/cth16-executive-summary.pdf>

5.3 Registry of Provider Organizations

Year(s) of data used: 2016

Description of data: In 2012, the Massachusetts Legislature passed Chapter 224 of the Acts of 2012 (Chapter 224), *An Act Improving the Quality of Health Care and Reducing Costs Through Increased Transparency, Efficiency and Innovation*. Chapter 224 directs the HPC to develop and administer a registration program for Provider Organizations, through which those entities subject to the law will submit information on their organizational and operational structure and governance. The law also requires Provider Organizations to complete an annual filing with the Center for Health Information and Analysis (CHIA). The HPC and CHIA have created a single platform – the Massachusetts Registration of Provider Organization (MA-RPO) Program – that incorporates the required data elements for both the HPC and CHIA. Under the MA-RPO Program, a Provider Organization will submit an annual filing to the Commonwealth, which will satisfy its obligations under both M.G.L. c. 6D, § 11 and M.G.L. c. 12C. The MA-RPO Program is a first-in-the-nation program that increases transparency of provider structure and performance, tracks changes in the healthcare market over time, and provides researchers, policymakers, market participants, and the public with access to the resulting dataset.

The MA-RPO program is guided by the following principles: administration simplification, avoiding duplicative data requests through ongoing coordination with other state agencies, balancing the importance of collecting data elements with the potential burden to Provider Organizations, and phasing in the types of information that Provider Organizations must report over time.

Available from: <http://www.mass.gov/anf/budget-taxes-and-procurement/oversight-agencies/health-policy-commission/registration-of-provider-organizations/2015-initial-registration-data/>

6 Henry J. Kaiser Family Foundation

6.1 State Health Facts

Year(s) of data used: 2010 - 2015

Description of data: State Health Facts is a project of the Henry J. Kaiser Family Foundation (KFF) and provides open access to current and easy-to-use health data for all 50 states, the District of Columbia, and the United States; as well as counties, territories, and other geographies. State Health Facts is comprised of more than 800 health indicators and provides users with the ability to map, rank, trend, and download data. Data come from a variety of public and private sources, including Kaiser Family Foundation reports, public websites, government surveys and reports, and private organizations. The data is generally available by state as well as at a national level which allows researchers to compare and analyze certain indicators state-by-state, and to the national average.

Available from: <http://kff.org/statedata/>

7 U.S. Census Bureau

7.1 American Community Survey

Year(s) of data used: 2009 to 2015

Description of data: The American Community Survey from the United States Census Bureau is a survey that collects demographic data (age, sex, race, household structure, income, health insurance, education, etc.) from communities around the United States. Because the survey data are collected from a sample of people who choose to participate and share their responses, the American Community Survey is stronger for providing population distributions of characteristics, in measures like percentages, means, medians and rates. Summary data from the survey is released annually, in 1-year, 3-year average, and 5-year average formats, where the output values are averages over the period prior to the release year. The 1-year data are the most current, but the least precise due to smallest sample size. The 3-year and 5-year data can both be helpful for studying smaller populations where a 1-year sample size is not large enough to be significant, but both have the tradeoff of being less current than the 1-year data.

Available from: <http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml>