

Overview of the Massachusetts All-Payer Claims Database (MA APCD)

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Introduction

The Center for Health Information and Analysis (CHIA) is a state agency that monitors the Massachusetts health care system, offering a variety of data and analytic products to support continual improvements in health care quality, affordability, access, and outcomes.

The Massachusetts All-Payer Claims Database (MA APCD) is critical to this effort. It enables CHIA, its partners, and its customers to pursue a wide variety of complex research and analyses that support state agency operations and enhance the ability of payers and providers to deliver care. As health policy challenges evolve, the MA APCD continues to adapt to changing data and analytic needs while staying true to its enduring mission: driving higher-quality care, lowering costs, and expanding access.

This paper provides a high-level description of the MA APCD and CHIA's related processes. For more information, see CHIA's [Massachusetts All-Payer Claims Database information page](#).

Administrative Simplification for Greater Insight

Many state agencies use health care claims data in their research, regulatory activities, and operations, including the Massachusetts Health Policy Commission (HPC), the Massachusetts Department of Public Health (DPH), and the Massachusetts Division of Insurance (DOI). These agencies' needs are diverse; separate requests for data directly from health insurance payers and providers could be complex, overlapping, or even contradictory. CHIA's management of the MA APCD provides administrative simplification, serving multiple agencies' needs with health care claims data maintained by a single agency.

CHIA collects, stores, and maintains data from payer and provider claims databases, serving as a central information repository and steward of data quality. This allows other agencies to perform analysis more efficiently, providing greater insight into costs, utilization, and health outcomes in the state.

The MA APCD is the foundation of the DPH's [Public Health Data Warehouse](#), which [brings together data from multiple sources to enable informed policymaking](#), like the [2019-2021 medication for opioid use disorder \(MOUD\) pilot](#) that reduced mortality by 50 percent. This linked data enables impactful studies not only from government agencies but also from independent researchers, such as a [2024 investigation](#) capturing the impact of both patient-level (e.g., race, insurance, comorbidities) and prescriber-level (e.g., training, panel size) [factors on treatment outcomes](#).

Even by itself, the MA APCD is a powerful tool for evaluation of the state's health care system. The HPC uses the data in several ways:

- to examine and propose solutions to pressing issues like [lower payment incentives for primary care](#) and the [impact of rising GLP-1 medication prescriptions](#)

- to provide a comprehensive view of Massachusetts' progress toward its health care system goals in its [Annual Health Care Cost Trends Report and Policy Recommendations](#)
- to perform cost and market impact reviews of hospital mergers, like [2024's proposed clinical affiliation](#) between Dana-Farber Cancer Institute, Beth Israel Lahey Health, Beth Israel Deaconess Medical Center (BIDMC), and Harvard Medical Faculty Physicians at BIDMC

In addition, the DOI uses the MA APCD to produce quarterly and annual [membership reports for health maintenance organizations](#) in the state, which show changes in insurance networks and utilization over time. Using the MA APCD allows these agencies to pursue different health care improvement goals from a common understanding of the state's conditions and needs.

Independent researchers use the MA APCD to perform analyses on how policy design influences health care coverage and spending, like this [2025 report](#) showing the [adverse impact of administrative hassles on coverage](#). CHIA's [Data User Workgroup](#) meets monthly, connecting independent researchers with CHIA's in-house data experts, and CHIA's website links to [resultant research using CHIA data](#). In concert with government agency analysis, independent research serves the MA APCD's trifold goal of improving health care quality, costs, and access in Massachusetts.

Data Sources and Scope

The MA APCD includes data on coverage and services for Massachusetts residents with public and private insurance. It includes data from both health insurance payers and third-party administrators.

Through 2015, data from most self-insured and fully insured plans are included. Beginning in 2016, as a result of the Supreme Court decision in *Gobeille v. Liberty Mutual*, some self-insured plans have been removed from the MA APCD. For information, see CHIA's presentation on [demographic differences in MA APCD data](#) before and after *Gobeille*. *Gobeille* does not prohibit voluntary submission of self-insured plan data to the MA APCD, and CHIA encourages payers and employers to submit self-insured data to support a comprehensive understanding of the commercial market. To learn more about submitting to CHIA, please contact apcd.data@chiamass.gov.

The bulk of the records in the MA APCD are medical, pharmacy, and dental claims submitted by commercial insurance payers and public programs (Medicare Advantage and Medicaid/MassHealth). These claims come both from medical carriers and from specialty carriers and administrators of "carved out" services including pharmacy, mental health/substance use treatment and care, dental, and vision. The database also contains records about individual plan members (e.g., demographics and enrollment), providers, and insurance products (e.g., product type and coverage type).

Certain kinds of coverage are excluded from the MA APCD:

- Medicare Fee-for-Service
- Workers' Compensation
- TRICARE and the Veterans Health Administration
- Federal Employees Health Benefit Plan

Information on uninsured individuals is only included to the extent that they enroll in the Commonwealth's Health Safety Net.

Governance

Regulations

While not a covered entity under the Health Insurance Portability and Accountability Act of 1996 (HIPAA), CHIA holds itself to a comprehensive set of privacy standards. Data governance rules and procedures are outlined in CHIA's statute, implementing regulations, and a variety of sub-regulatory guidance.

Customers receiving the MA APCD are required to document their obligations to data privacy and security through a Data Use Agreement. CHIA's website has more information on [CHIA's APCD data release procedures](#) and [Data Use Agreement](#).

State agencies using the MA APCD may request new data elements to support their operations. CHIA develops data specifications, reviews them with payers, and updates Submission Guides accordingly.

Uses and Access

Access and use of MA APCD data is governed by [957 CMR 5.00](#). To realize the highest value of the MA APCD, CHIA releases data extracts to government agencies, payers, providers, provider organizations, and researchers. When reviewing data requests, CHIA uses an application process to determine whether the release meets the criteria required in its regulations. As part of this process, CHIA evaluates who is requesting the data, the purpose of the request, and the type of data requested. Requests to use CHIA data are evaluated using a multi-layer process that considers research and project objectives, whether the data requested is the minimum necessary, potential risks to patient privacy, and the public interest.

Data in the MA APCD is available to government agencies for public purposes; to payers, providers, and provider organizations for treatment, payment, and health care operations; and for research. Data for these purposes is available in standardized form as either a de-identified data set or a limited data set, which excludes direct identifiers. For any other purposes, only de-identified data is available.

Applicants by Data Type and Product

- Government agency for a public purpose
- Payer, provider, or provider organization for treatment, payment, or health care operations (TPO)
- Research

Data Type	Data Product
De-identified	Standard De-identified
Identifiable	Standard Limited Data Set
Linked	Custom Extract

- Use not government public purpose, TPO, or research

Data Type	Data Product
De-identified	Standard De-identified

Applications that include a request for identifiable or linked Medicaid data, including data from the Health Safety Net and Medicaid Managed Care programs, are shared with MassHealth for its separate approval. MassHealth restricts the use of individually identifiable data of Medicaid recipients to uses that are directly connected with the administration of the Medicaid program.

Before receiving data, applicants are required to sign CHIA's Data Use Agreement, which imposes specific requirements to maintain data security and protect patient privacy.

Data Submission and Quality

Submitters

Although more than 50 payers currently submit data to the MA APCD, MassHealth and the following 12 private payers represent most of the non-Medicare data in the database: Blue Cross Blue Shield of Massachusetts, Tufts Health Plan, Harvard Pilgrim Health Care, Elevance Health (Wellpoint), Boston Medical Center HealthNet, Mass General Brigham Health Plan, Fallon Community Health, Health Plans Inc., Aetna, Cigna, Health New England, and UnitedHealthcare.

Procedures

Payers currently submit 7 files to CHIA:

- Claims:
 - Dental (DC)
 - Medical (MC)
 - Pharmacy (PC)
- Member Eligibility (ME)
- Product File (PR)
- Benefits Plan Control (BP)
- Provider File (PV)

Payers submit files monthly except for the Product File, which is submitted quarterly. MassHealth also provides an enhanced eligibility file. More details of data submissions are available in the [APCD Submission Guides](#), [information for data submitters](#), and periodic administrative bulletins.

Beginning in January 2026, payers will start submitting a new Member Simplified file containing data elements about race, ethnicity, language, disability status, sex assigned at birth, sexual orientation, and gender identity (RELD/SOGI). The Member Simplified file will become available to certain requesters later in the year as part of CHIA's ongoing strategy to improve health care equity.

Before leaving the data submitter's site, personal identifiers such as name and Social Security number are hashed (replaced with randomly generated 128-character references that do not contain identifying information). Submitted files are then encrypted and sent through a secure portal. CHIA's hashing and encryption software follows protocols recommended by the National Institute of Standards and Technology.

Verification and Compliance

Each data element in the Submission Guides is characterized by its importance to CHIA and MA APCD data users. CHIA assigns an "A" level to data elements that are the most important and "B," "C," and "Z" levels to less-important elements. A-level data elements are the focus of data intake edits and CHIA quality assurance efforts.

For each data element, regardless of level, CHIA sets thresholds for compliance. For example, each provider record in the Provider File needs to include Plan Provider ID 100 percent of the time but Middle Initial 1 percent of the time. Thresholds are published in the [MA APCD Documentation Guides](#). Payers may ask for a temporary variance from the standard thresholds—for example, if their system lacks a particular data element—which CHIA grants on a case-by-case basis.

Payer-submitted files undergo more than 1,000 programmed edits in multiple categories:

- Verification of proper formatting (e.g., numeric or alphanumeric)
- Verification that identification elements, linkage elements, and demographic information are present in expected form
- Verification of logical relationships, such inpatient facility claims including admitting diagnosis codes
- Validation against established code sets (detailed in the following section)

Edits can identify failures that require resubmission or generate alerts to payers that certain elements are not in compliance.

CHIA supports payers in their submission work. Every other week, calls are held as needed with each of the largest payers to address data quality issues observed by CHIA analysts and MA APCD users. CHIA works collaboratively with payers to define new data elements through regular [Technical Advisory Group \(TAG\) meetings](#) and to improve the quality and completeness of submissions on an ongoing basis.

Validation and Standardization

Data validation is done incrementally, often in concert with state agencies as they begin to use the MA APCD to replace other data streams. The goal of data validation is to ensure that aggregated and

derivative reporting make sense relative to previously reported data and/or industry norms. Payers are closely involved in data validation, resulting in continued improvements to data submission quality.

CHIA validates and standardizes the MA APCD in the following ways:

- Application of external source codes from organizations like the American Medical Association, the Centers for Medicare and Medicaid Services, and the U.S. Census Bureau to maintain consistency in elements like Place of Service, Type of Service, and Provider Type
- Alignment of Procedure Codes and Diagnosis Codes with available standards like the International Classification of Diseases (ICD-9/ICD-10), the Healthcare Common Procedure Coding System (HCPCS) Level I and Level II.
- Application of the National Provider Identifier index to verify that National Provider Identifiers on claims are valid
- Removal of possible Social Security Identifiers through pattern analysis

In consultation with Onpoint Health Data, CHIA created a statistically de-identified MA APCD to preserve research utility while safeguarding privacy. Rather than removing all identifiers from the data per the HIPAA Safe Harbor method, CHIA applied the Expert Determination method, removing some identifiers while making others less specific. For more information on CHIA's de-identification process, please see the [MA APCD De-Identification Summary](#).

Enhancements

CHIA proactively enhances the MA APCD to help data users interpret and maximize the research utility of available information. Major existing enhancements are:

- **Master Patient Index:** The Master Patient Index allows tracking of individual member utilization across multiple plans as the member's insurance coverage changes over time. The Master Patient Index assigns a unique surrogate key to each individual that is not personally identifiable.
- **Highest Version Indicator:** MA APCD submissions occur as "claim lines"; typically, each time a payer adjudicates a claim, it creates a new line. As a result, each claim can have multiple lines. Identifying the highest version, or latest status, of the claim allows analysts to determine total charges, discounts, payments, and other related information. Highest-version flags based on payer-specific logic are available for many of the largest payers in medical, pharmacy, and dental claims.

CHIA is planning additional enhancements for future releases while maintaining and improving these existing ones.

Documentation and Support

CHIA's website hosts a wealth of documentation about the MA APCD, including release-specific Documentation Guides, Release Notes, and Data Specification Workbooks. Users can also refer to the [Data Submission Guides](#); while intended for payers submitting data, they include information

valuable to users, including file layouts and details on which data elements are required for submission.

In CHIA's monthly [Data User Workgroup](#) meeting, users receive guidance on data releases and enhancements as well as detailed responses from CHIA's in-house data experts to user questions about specific data issues. Related presentations, such as 2023's [claims linkage demonstration](#), and presentations on major industry changes, such as 2017's [ICD-9 to ICD-10 changes](#), are also available.

The Future of the MA APCD

There are nearly limitless ways the MA APCD can aid in improving the Massachusetts health care system. In addition to future data enhancements and administrative simplification work, CHIA explores partnerships with payers and providers to use the database to improve the coordination and delivery of patient care. CHIA also continues to invest in infrastructure and analytic expertise for the MA APCD in pursuit of its mission of delivering meaningful analysis of the Commonwealth's health care market and the experience of Massachusetts residents. The MA APCD is the data foundation for an ambitious agenda of analytic products in the years to come.

Learn More

To learn more about the MA APCD and to stay up to date on new developments, visit CHIA's [Massachusetts All-Payer Claims Database information page](#).

For specific questions about content or use of data, email apcd.data@chiamass.gov. If applicable, include the related Application ID, name of Principal Investigator, Data User Agreement, and data version. Please keep questions brief to improve response time.



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