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Massachusetts All Payer Claims Database (APCD)

Marilyn Schlein Kramer
Center for Health Information and Analysis, Commonwealth of Massachusetts

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Massachusetts All Payer Claims Database (APCD)

Marilyn Schlein Kramer
Deputy Executive Director
Our mission is to monitor the Massachusetts health care system and to provide reliable information and meaningful analysis for those seeking to improve health care quality, affordability, access, and outcomes.

Our vision is to be the Commonwealth’s hub and a national leader in health care data and analytic services.
CHIA as the Data Hub

**Payers**

*All-Payer Claims Database*
- Total Medical Expense
- Relative Prices (paid to providers)
- Premiums
- *Alt. Payment Methods (future)*

**Providers**

- “Case Mix” Data (hospital services)
- Cost Reports (Hospitals, CHCs, etc.)
- Hospital Financials
- *Registered Provider Org. (future)*
- *Statewide Quality Measures (future)*

**Surveys/Analyses**

- Household insurance survey
- Employer insurance survey
- Mandated Benefit Reviews

**Government Data**

- MassHealth
- Fair Share Contribution
- Student Health Plan
- *Health Planning Inventory (future)*

Note: public access to each data set varies. See our website for details.
The APCD Builds on Core Competencies and Systems

1982

Case Mix Files – Discharge, ED, Observation (Acute Care Hospitals)

2006

Health Care Quality and Cost Council (Payers)

2010

All Payer Claims Database (Payers)

2012
Massachusetts’ APCD is Part of a Growing National Trend
What Makes the Massachusetts APCD Unique

• Built to achieve administrative simplification
  – State agencies required to source payer data from APCD whenever feasible

• Comprehensive
  – Details on plan design and provider characteristics
  – Public and private payers
  – Dental claims

• Accessible to broad variety of users

• Development and maintenance done “in-house”
Selected Data Elements in the APCD

- Connector/Risk Adjustment for ACA
  - Indicator Purchased thru HIX, Actuarial Value, Tobacco Use
- Division of Insurance
  - NAIC Code
- Health Policy Commission
  - Total Medical Expense
- Group Insurance Commission
  - GIC ID
- CHIA for Total Medical Expense, Cost Trends
  - Non Claims Payments, Payment Arrangement Type
- Connector and DOI
  - Monthly Premium, Employer ZIP, Family Size
- Connector, DOI and GIC
  - Market Category Code
- Connector, CHIA and DOI
  - Employer Contribution

All Payer Claims Data Base

Private and Public Payers
More than 120 Payers Submit Data to APCD

<table>
<thead>
<tr>
<th></th>
<th>Medical</th>
<th>Pharmacy</th>
<th>Dental</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top 5 Payers</td>
<td>71.0%</td>
<td>60.8%</td>
<td>83.2%</td>
</tr>
<tr>
<td>Top 10 Payers</td>
<td>89.5%</td>
<td>83.8%</td>
<td>96.7%</td>
</tr>
<tr>
<td>Top 15 Payers</td>
<td>97.0%</td>
<td>95.3%</td>
<td>98.6%</td>
</tr>
<tr>
<td>Top 20 Payers</td>
<td>99.0%</td>
<td>98.0%</td>
<td>99.4%</td>
</tr>
<tr>
<td>Top 25 Payers</td>
<td>99.5%</td>
<td>99.3%</td>
<td>99.8%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Medical</th>
<th>Pharmacy</th>
<th>Dental</th>
</tr>
</thead>
<tbody>
<tr>
<td>No of Additional Payers</td>
<td>24</td>
<td>18</td>
<td>19</td>
</tr>
<tr>
<td>Submitting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Payers by File</td>
<td>49</td>
<td>43</td>
<td>44</td>
</tr>
</tbody>
</table>
Data Presently Available

- Medical, pharmacy and dental services with dates of service beginning 2008
  - Self-insured plans beginning 2011
- Private payers only
- Generally all MA residents* with some excluded groups:
  - Uninsured/self pay
  - Workers’ Compensation
  - TriCare/VA
  - Federal Employees Health Benefit Plan
  - Small private insurers**

* Out of state residents who are GIC members
** CHIA is developing regulations concerning minimum data thresholds. Carriers with less than the minimum data threshold would not be required to submit data to the APCD unless they required by DOI or the Connector.
Expected Availability of Data

• June 2013 Release
  – 2009 – 2011 dates of service (paid thru Feb 12)
  – MassHealth
  – Medicare

• December 2013 Release
  – 2009-2012 dates of service (with run out)
  – Private and public payers
  – Master Member Index
The APCD is Composed of Six Files

Selected Elements

All-Payer Claims Database

Provider File
- Service/prescribing provider
  - Name, Tax ID, Payer ID, NPI, Specialty code, City, State, Zip code
- Billing Provider
  - Name, payer ID, NPI

Member File
- Personal Health Info (encrypted)
  - Subscriber and member names and social security numbers
- Patient Demographics
  - Age, gender, relationship to subscriber

Claims Files (n = 3)
- Medical Claims
- Pharmacy Claims
- Dental Claims
- Service Information
  - Service and paid dates, paid amount, admission types, diagnosis and procedure information

Product File
- Type of Product
  - HMO, POS, Indemnity
- Type of Contract
  - Single person, family
- Coverage Type
  - Self-funded, Individual, Small group
**Definition:** Carrier uses the flag to report whether Behavioral/Mental Health is a covered benefit using coding options for Yes (1), No (2), Unknown (3), Other (4), Not Applicable (5).

<table>
<thead>
<tr>
<th>Behavioral Health Benefit Flag</th>
<th>Total Flags</th>
<th>Flag Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Invalid Code</td>
<td>53,391</td>
<td>0%</td>
</tr>
<tr>
<td>Yes</td>
<td>18,743,238</td>
<td>42%</td>
</tr>
<tr>
<td>No</td>
<td>10,326,220</td>
<td>23%</td>
</tr>
<tr>
<td>Unknown</td>
<td>3,563,119</td>
<td>8%</td>
</tr>
<tr>
<td>Not Applicable</td>
<td>11,818,853</td>
<td>27%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>44,504,821</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Note:** Filing Specifications inform carriers that MA APCD is expecting a 100% base percentage in reporting volume of data in regards to condition requirements. As of August 2012, **97.5% (44,504,821) of the eligibility records (45,625,414) contain data on Behavioral Health Benefit Flag status.**
Is the APCD “Big Data” or “Large Data”? 

Big Data Characteristics

- Volume – 4 TB and growing
- Variety – 100+ payers, but all claims
- Velocity – claims lag
**Member Gender**

**MC012**

**MEDICAL CLAIMS ELEMENT**

**Data Format:** one-character text/ single-choice  
**Minimum Constraint:** 1  
**Maximum Constraint:** 1

**Definition:** Reports patient gender as found on the claim in an alpha format.

**Accepts Null Values:** Yes

**Required for all Medical Claims Records with 98% Expected Threshold**

**Category B**

**Field Values:** Member Gender must be within the domain of values listed below.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>Female</td>
</tr>
<tr>
<td>M</td>
<td>Male</td>
</tr>
<tr>
<td>O</td>
<td>Other</td>
</tr>
<tr>
<td>U</td>
<td>Unknown</td>
</tr>
</tbody>
</table>

**Data Source:** Component of Medical Record, Case Manager Notes, Hospital Discharge Summary, Nurses’ Notes  
**Data Collector:** Case Manager/Social Services’ Notes, Inpatient Care Provider, Nurses’ Notes  
**Similar Data Elements in APCD:** Member Gender (DC012), Member Gender (ME013), Member Gender (PC012)  
**Uses:** Member Gender is used to identify the gender of the patient as found on the claim. Member Gender can validate clinical services when applicable as well as Unique Member ID.

**Filing Edit Check:** Member Gender must be within the valid domain of values.

**Public Health Use:** Allows data to be sorted based on gender, analyses of patient gender mix, and analyses of cost trends by gender.

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**Center for Health Information and Analysis Quality Assurance Metrics**

<table>
<thead>
<tr>
<th>CHIA QA Rule ID</th>
<th>Level</th>
<th>QA Metric Description</th>
<th>QA Metric Justification</th>
<th>Metric Results</th>
<th>QA Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>MC012-1</td>
<td>1</td>
<td>Blank Values</td>
<td>Blanks can lead to underestimating of count by gender</td>
<td>Less than 0.001% (746 medical claims records out of 1,231,829,066) across all years</td>
<td>3/28/2013</td>
</tr>
<tr>
<td>MC012-2</td>
<td>1</td>
<td>Data Format Errors</td>
<td>Values that are submitted as a lowercase letter need to be converted to an uppercase letter</td>
<td>Less than 0.01% (93,523 medical claims records out of 1,231,829,066) across all years</td>
<td>3/28/2013</td>
</tr>
<tr>
<td>MC012-3</td>
<td>1</td>
<td>Use of Valid Values</td>
<td>Values are within the lookup table.</td>
<td>99.99% (1,231,734,797 medical claims records out of 1,231,829,066) across all years</td>
<td>3/28/2013</td>
</tr>
</tbody>
</table>

*Member Gender is also reported in the Dental and Pharmacy Claims files, as well as the Member Eligibility file.*
Payment Arrangement Type

**Data Format:** two-character text/ single-choice

**Definition:** Report the value that defines the contracted payment methodology for this claim line.

**Accepts Null Values:** No

**Required for all Medical Claims Records with 98%* Expected Threshold**

**Category A0**

**Permissible Field Values:** Payment Arrangement Type must be within the domain of values below.

<table>
<thead>
<tr>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Capitation</td>
</tr>
<tr>
<td>02</td>
<td>Fee for Service</td>
</tr>
<tr>
<td>03</td>
<td>Percent of Charges</td>
</tr>
<tr>
<td>04</td>
<td>DRG</td>
</tr>
<tr>
<td>05</td>
<td>Pay for Performance</td>
</tr>
<tr>
<td>06</td>
<td>Global Payment</td>
</tr>
<tr>
<td>07</td>
<td>Other</td>
</tr>
<tr>
<td>08</td>
<td>Bundled Payment</td>
</tr>
<tr>
<td>09</td>
<td>Payment Amount Per Episode (PAPE) for (Valid for MassHealth ONLY)</td>
</tr>
</tbody>
</table>

**Data Source:** Component of the Medical Record, Hospital Discharge Summary

**Data Collector:** Insurance Company, Inpatient Care Provider

**Uses:** This Data Element can be used in the adjudication process.

**Filing Edit Check:** Payment Arrangement Type must be within the valid domain of values, and is required.

**Public Health Use(s):** Payment Arrangement Type can be used to analyze changing trends of payment systems across time and carriers.

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**Center for Health Information and Analysis Quality Assurance Metrics**

<table>
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<tr>
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<th>QA Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>MC113-1</td>
<td>1</td>
<td>Blank Values</td>
<td>Blanks can lead to underestimating of record count.</td>
<td>12% (150,972,175 medical records out of 1,231,829,065) across all years</td>
<td>3/4/2013</td>
</tr>
<tr>
<td>MC113-2</td>
<td>1</td>
<td>Data Format Errors</td>
<td>Values need zero padding if they are from 1 to 9 and without leading zero.</td>
<td>Less than 0.001% (3,656 medical claims records out of 1,231,829,065) across all years</td>
<td>3/4/2013</td>
</tr>
<tr>
<td>MC113-3</td>
<td>1</td>
<td>Use of Valid Values</td>
<td>Values are within the lookup table.</td>
<td>88% (1,080,853,235 medical claims records out of 1,231,829,065) across all years</td>
<td>3/4/2013</td>
</tr>
</tbody>
</table>

*In Version 2.1 of the Massachusetts APCD Medical Claim File Submission Guide, the expected threshold for this data element was 90%.*
# Variety of Research Topics

## Approved Applications to Date

<table>
<thead>
<tr>
<th>Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>MA Department of Public Health</td>
</tr>
<tr>
<td>University of MA Medical School</td>
</tr>
<tr>
<td>MA Department of Public Health and U Mass Medical School</td>
</tr>
<tr>
<td>Yale &amp; University of Pennsylvania Bureau of Econ Research</td>
</tr>
<tr>
<td>Mass Health Quality Partners</td>
</tr>
<tr>
<td>Harvard School of Public Health</td>
</tr>
</tbody>
</table>

### Study Topic

- **MA Department of Public Health**
  - Utilization of Tobacco Treatment in Massachusetts to Quit Smoking
  - Evaluation of Mass in Motion and the Community Transformation Grants
  - Substance Abuse Treatment Needs and Services Gap Analysis
  - STD, HIV, and Viral Hepatitis Testing, Treatment and Screening Trends

- **University of MA Medical School**
  - Child Health Care Quality Measurement – Core Measure Set Testing

- **MA Department of Public Health and U Mass Medical School**
  - Health Care Reform and Disparities in the Care and Outcomes of Trauma Patients

- **Yale & University of Pennsylvania Bureau of Econ Research**
  - The Effects of Fragmentation in Health Care
  - Maternal and Paternal Health and Children’s Healthcare Access and Use

- **Mass Health Quality Partners**
  - Practice Pattern Variation Analysis (PPVA) Program

- **Harvard School of Public Health**
  - Will the Academic Innovations Collaborative Increase the Value of Primary Care and Improve Providers’ and Trainees’ Experiences?
  - Understanding High Cost Patients in Massachusetts
  - Describing the Epidemiology of Readmissions

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32
The center **shall permit** providers, provider organizations, public and private health care payers, government agencies and authorities and researchers **access to de-identified data** collected by the center for the purposes of lowering total medical expenses, coordinating care, benchmarking, quality analysis and other research, administrative or planning purposes, provided, **however**, that the data **shall not include information that would allow the identification of the health information of an individual patient, except to the extent necessary for a government agency** or authority to accomplish the **public purposes** for which access was given.

The center **shall also permit** providers, provider organizations, and public and private health care payers **access to data with patient identifiers solely for the purpose of carrying out treatment and coordinating care among providers.**
Extensive Resources on Website

www.mass.gov/chia/apcd

Center for Health Information and Analysis

All-Payer Claims Database

The APCD is comprised of medical, pharmacy, and dental claims, as well as information about member eligibility, benefit design, and providers for all payers covering Massachusetts residents. The APCD streamlines required data submissions for payers and also affords a deep understanding of the Massachusetts health care system by providing access to timely, comprehensive, and detailed data. The recently released APCD will be an essential tool to improve quality, reducing costs, and promote transparency.

APCD Introduction
View an overview of the APCD and its intended uses.

Submitting Data to the APCD
See APCD regulations, data submission guidelines, quality assurance edits, data dictionaries, and database schema.

Accessing the APCD
Learn how to apply to use the APCD as well as pricing information.
How to Learn More

Marilyn Schlein Kramer
Deputy Executive Director, Health Information
marilyn.kramer@state.ma.us