

Opportunities for Using Healthcare Claims Data for Pragmatic Sustainability Assessments

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Learning Objectives

- Identify national and local sources of healthcare claims data from public and private payers in the US
- Describe the structure and domains of claims data available for pragmatic research
- Describe general steps for acquiring and using claims data for pragmatic research
- Understand some of the common challenges and limitation of healthcare claims data for pragmatic research

Pragmatic Research Uses of Healthcare Claims Data

- Data designed, collected and processed for the purpose of paying providers for delivering services in a fee-for-service framework
 - Implications for content, structure and quality of individual data elements
- Rich source of data, however, not designed, collected, processed or stored for research purposes
- Best suited to measuring healthcare utilization and cost from the payer perspective, although as alternative payment models expand introduces limitations for measuring cost
- Provides a source to measure revenue from a provider perspective, although has several limitations for this purpose
- While used for quality measurement, these are essentially measures of utilization

Sources of Healthcare Claims Data

- Research Data Assistance Center (ResDAC: <https://resdac.org/>)
 - Medicare
 - Medicaid
 - Medicaid Analytic Extract (MAX) files 1999 - 2015
 - Transformed Medicaid Statistical Information System (T-MSIS) Analytic Files (TAF) 2014 – 2019 (preliminary)
- State Medicaid Agencies
- State All Payer Claims Databases
 - Information on each state can be found at <https://www.apcdcouncil.org/>
- Private Organizations
 - FAIR Health National Private Insurance Claims database
 - Health Care Cost Institute
 - IBM MarketScan
 - Many others emerging

Basic Structure of Healthcare Claims Data

- Member enrollment/eligibility data tables
 - Key linkage data element - Member ID
 - Demographics of members
 - Plan/coverage information
- Provider data tables
 - Key linkage data element – National Provider Identifier (NPI)
 - Individual providers
 - Facilities/organizations
- Medical claims tables
 - Key linkage data elements – Claim number, Member ID, NPI
 - Header and Line files
 - Institutional claims
 - Professional claims

Basic Structure of Healthcare Claims Data (continued)

- Pharmacy claims tables
 - Key linkage data elements – Claim number, Member ID, NPI
 - Quantity/Days supplied
- Dental claims tables
 - Key linkage data elements – Claim number, Member ID, NPI

Basic Structure of Claims Tables

- Claim amounts (header and line)
 - Charges
 - Allowed amounts
 - Plan paid amounts
 - Patient responsibility (copayment, coinsurance)
 - Third party liability (often just an indicator)
- Provider - NPIs
 - Billing provider
 - Service/Rendering provider
 - Service provider location (not in all claims tables)
 - Attending/Supervising provider (not in all claims tables)
 - Referring provider (not in all claims tables)
 - Prescribing provider (not in all claims tables)

Basic Structure of Claims Tables (continued)

- Procedures
 - CPT/HCPCS – professional claims
 - Modifiers
 - ICD 9/10 – institutional claims
- Diagnoses
 - Primary diagnosis
 - Secondary diagnoses
 - Admitting diagnosis (not in all claims tables)
 - Diagnosis related group (not in all claims tables)
- Type of service
 - Place of service codes
 - Claim type
 - Units of service (not in all claims tables)
 - Modifiers
- Other key data elements
 - Dates of services
 - Paid dates

Acquiring Healthcare Claims Data

- Be prepared to:
 - Submit a research and data analysis plan
 - Comply with information technology security requirements
 - Sign a data use agreement or HIPAA Business Associates agreement
 - Provide a finder file in the format required by data provider
 - Pay for access or data files
 - ResDAC provides prices on its website <https://resdac.org/cms-fee-information-research-identifiable-data>
 - State Medicaid Agencies will vary by state
 - APCD varies by custodian
 - Private organizations varies
- Understand data providers methods for analyzing the data
 - Access through a portal
 - Distribute data files through a secure data transfer platform

Common Challenges in Using Healthcare Claims Data for Pragmatic Research

- Data quality issues
 - If data element is not used in determining payments quality of that data element is questionable
 - Example: member race/ethnicity
 - Source should provide a data quality report
- Attribution of members to providers/interventions
 - Algorithms
- Linking multiple claims for an episode of care
 - Example: maternity care
- Longitudinally linking individuals who change insurance plans
- Accounting for claim redeterminations/reconciliations

Selected Limitations in Using Healthcare Claims Data for Pragmatic Research

- Extent to which database covers population of interest
- Absence of information on alternative payments (non FFS) to providers
- Absence of health outcomes measures

Q&A or Example

Example – Integration of Behavioral Health into Primary Care

- Types of analysis and selection of perspective
 - Cost Effectiveness Analysis: payer perspective
 - Return on Investment: provider perspective
- Intervention characteristics
 - Level of intervention: practice
 - Population of interest
- Selection of healthcare claims data source(s)
- Additional data needs