Medicaid Analytic Extract Files

DEVELOPMENT AND STRUCTURE

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Overview

- **Source of CMS Medicaid data**
  - State MSIS tapes: MMIS, encounter data, state program data
  - Complete data requires all three sources

- **CMS Medicaid research files**
  - MAX Medicaid Analytic Extract
  - Calendar year data, five files per state
    - Personal Summary, Other Therapy, Inpatient, Long Term and Prescription Drug
CMS Medicaid Research Files

- CMS Medicaid Research Files
  - pre-1999 data files:
    » State Medicaid Research Files (SMRF)
  - 1999 and forward:
    » Medicaid Analytic Extract (MAX)

- “State files” used by some researchers may be some or all of the MAX source files

- Limitations of source files brought forward
Overview of Data Systems

- State MMIS Claims and Eligibility Files
- Encounter Data System Files
- Non-MMIS Medicaid Files

- MSIS
  - MSIS Data Mart
  - MSIS Statistical Reports
  - MAX

MSIS

Non-MMIS Medicaid Files

Encounter Data System Files

State MMIS Claims and Eligibility Files
Data Systems

MSIS DATA SOURCES

- State MMIS Claims, Eligibility Files
- Encounter Data System Files
- Non-MMIS Medicaid Files

MSIS
Data Systems

MMIS

- **MMIS**
  - Medicaid Management Information System
  - Primary purpose: administrative
    » Beneficiary, provider enrollment
    » premium payment
    » State and federal, ad hoc reporting
    » investigate fraud and abuse
    » fee-for-service claims payment

- Not developed for research
Data Systems

MMIS

- **MMIS characteristics**
  - Flexibility in system design
  - Variables, definitions, file structures, data quality procedures vary by state
  - Administered by various contractors or the state
    - 2011: 18 by one contractor, 15 state adm, 12 by second contractor, remainder across other contractors
    - CMS report includes Regional Office (RO) contact
MMIS characteristics

- Utilization and payment data in MMIS files:
  - Based on date of adjudication
  - Separate records for adjustments & interim hospital bills
  - Potentially long lag between date of service and adjudication
  - National or state-specific claims forms or electronic systems
Data Systems

MMIS (CONT)

- MMIS characteristics
  - If used for research consider effects of:
    » State processing system
    » State specific codes
    » Missing services
      - Other state agencies
      - Potentially capitated managed care
Data Systems

MSIS DATA SOURCES

- State MMIS Claims, Eligibility Files
- Non-MMIS Medicaid Files
- Encounter Data System Files

MSIS
Data Systems

ENCOUNTER DATA

- Federally mandated beginning in 1999
  - Historically poor state compliance
  - ACA mandates or FMAP withheld
- Potential data inconsistencies
  - Vary from fee-for-service
  - Systems may vary state-to-state
- April, 2012 evaluation of MAX, 2007
  - Most states with comprehensive managed care:
    » Reported IP, RX encounters
    » Majority were complete, quality similar to FFS
Data Systems

MSIS DATA SOURCES

- State MMIS Claims, Eligibility Files
- Encounter Data System Files
- Non-MMIS Medicaid Files

MSIS
Data Systems

NON-MSIS DATA SOURCES

- Services paid under specific state programs
  - Eg: EPSDT (Early Periodic Screening, Diagnosis, and Treatment), mental health services
  - Not processed through MMIS
- Potentially missing even from MSIS:
  “TX has a large number of state agencies responsible for the administration and processing of Medicaid claims for different parts of the program making it difficult for them to collect and report Medicaid services uniformly in MSIS”
Data Systems

MSIS DATA SOURCES

State MMIS Claims, Eligibility Files

Encounter Data System Files

Non-MMIS Medicaid Files

MSIS
Data Systems

MSIS

- Medicaid Statistical Information System (MSIS)
  - 1986, optional, in lieu of 2082 report
  - Again, not research data collection system
  - Federal Fiscal Year, Quarterly files
    » adjustments, interim bills included
    » Filed by date of payment, not service
    » Enrollment data by processing date
      - Retroactive eligibility is out of chronological order
Data Systems

MSIS STATISTICS

- State MMIS Claims and Eligibility Files
- Encounter Data System Files
- Non-MMIS Medicaid Files

MSIS Data Mart
MSIS Statistical Reports
Data Systems

State MMIS Claims and Eligibility Files

Encounter Data System Files

Non-MMIS Medicaid Files

MSIS

MSIS Data Mart
MSIS Statistical Reports

MAX

ResDAC RESEARCH DATA ASSISTANCE CENTER
Data Systems

MAX

- Source is MSIS
  - Addition of CMS-created variables
- Enhancements create “Research friendly” files
  - Additional quality review in MAX creation
  - Data documentation includes
    » Variable values and definitions
    » Limitations and anomalies
    » Data validation tables
Data Systems

MAX

- Enhancements over MSIS data tape files
  - Organized by calendar year of service
  - Final action events
  - Any retroactive eligibility placed in proper chronology
  - Individual state eligibility/service mapping
    » reviewed and edited
    » uniform coding across states
  - Linkage to Medicare Enrollment Database completed
  - Cross reference files applied for changes in MSIS IDs
MAX Data Files

- **Availability**
  - All states plus DC since 1999
  - Most current: 2008, (44 states), Processing 2009
    » States not complete for 2008: HI, MO, ND, PA, UT, WI, DC
  - Historic files:
    » No longer released by CMS
    » Only four states prior to 1992, CA, GA, MI, TN
    » 27 States 1992-95
    » 30 States 1996-98
MAX Data Files (cont)

- **MAX Data Set Contents**
  - five file types, per calendar year, per state
  - enrollment:
    » Personal Summary File (PS)
  - Utilization
    » Inpatient (IP)
    » Long Term Care (LT)
    » Prescription Drug (RX)
    » Other Therapy (OT)
MAX Data Files (cont)

- Link between files is Bene_ID
  - Recent Past link was MSIS_ID
    - State-specific ID
    - Link within state, across files and years
    - “Should” remain constant for one individual across time
  - Bene_ID
    - Cross referenced between states, across years
    - Same ID in Medicare, assessment data and MAX data

- Some variables differ across years
  - Values refined for same variable
  - New variables added 2005, 2006, 2007, 2008 (descriptions or values)

- Record layouts/data dictionaries
  - Most current on CMS web site
  - Match year of data to year of layout
MAX Data Files (cont)

- **Personal Summary File (PS)**
  - Unique identifier
    » As released by Buccaneer,
      - Bene_ID
      - Recent past, MSIS_ID, crosswalk available
  - Demographics
  - Eligibility
    » Waiver enrollment
    » Detailed managed care enrollment
    » Dual eligibility for Medicare and Medicaid
    » Medicare Enrollment Database by SSN from state
      - HIC, date of death, Medicare eligibility, SSA language
  - Summary of charges and payments
MAX Data Files (cont)

- **Utilization Files**
  - 4 claim types: IP, LT, RX, OT

- **Standard across all claim types**
  - Enrollment variables from PS
  - Recommend using PS file

- **Vary by claim type in number, availability**
  - ICD-9 diagnosis codes
  - CPT-4, ICD-9, NDC, HCPCS, state specific procedure codes

- **Type of record**
  - IP, LT stay records
  - OT, RX service or line item records
MAX Data Files (cont)

Inpatient Claim File (IP) Utilization

- Bene_ID 123, 123, 123
- Bene_ID 456
- No claims Bene_ID 789

Other Therapy File (OT) Utilization

- Bene_ID 123
- Bene_ID 456, 456, 456
- Bene_ID 789, 789

Personal Summary File (PS) Enrollment

- Bene_ID 123
- Bene_ID 456
- Bene_ID 789

Long Term Care File (LT) Utilization

- No claims Bene_ID 123
- Bene_ID 456
- No claims Bene_ID 789

Prescription Drug File (RX) Utilization

- Bene_ID 123, 123, 123, 123
- Bene_ID 456, 456, 456, 456
- Bene_ID 789, 789
Medicaid Analytic Extract Files

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- Questions?