MESC 2013 - Enabling Health Care Innovation

A Vision for Data Analytic Possibilities within T-MSIS and MACPro

“The Need for Data Driven Decisions in a Changing World”
What are we going to cover today?

I. Setting the Stage for Medicaid and Chip

II. Need for Change and Realizing the Vision for Medicaid and Chip Data

III. Exploring the Analytic Possibilities
Setting the Stage

- Medicaid and CHIP today
  - $400B annually
  - 60M beneficiaries
  - ~3M providers
  - 500B medical services annually

- Medicaid and CHIP Tomorrow
  - $500B
  - 80M beneficiaries
  - 3M++ providers
  - 600B medical services annually
Matthew – a Medicaid Beneficiary

Matthew used to be a resident of Forest Haven, an institution notorious for its abuse and poor conditions. He now lives independently and has a full time job with New Vision Photography.
What is in Medicaid and CHIP?

- Medicaid (Waivers and State Plan)
- CHIP
- Basic Health Plan (2015)
- Medicaid Alternative Benefit Plans and Essential Health Benefits (2014)
- Differing Payment Delivery Options

- Programs
  - Community First Choice
  - Health Homes
  - Balancing Incentives
  - 1915 (i)
  - MFP
  - EPSDT
  - Other
What Data is Available Today?

Is it Federal Data or State Data?

State Data –
• MMIS
• Eligibility and Enrollment
• Case Records

Federal Data –
• Operational Data
  • (i.e. MSIS, MAX, MBES)
• Program Data
  • (i.e. Waiver Mgm’t System)
The Need for Change

Resources are shrinking and data driven decisions need to be made to ensure value in health care services

<table>
<thead>
<tr>
<th>Today's Pain</th>
<th>Today's Technology</th>
<th>Today's Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Medicaid and CHIP state Data set is incomplete and it is not current</td>
<td>1. Multiple databases on multiple platforms</td>
<td>1. Reports are questionable and subject to interpretation</td>
</tr>
<tr>
<td>2. Multiple data collections</td>
<td>2. A lot of manual operations in data collection and validation</td>
<td>2. Difficulties in determining the cost, integrity or value of the purchased service</td>
</tr>
<tr>
<td>3. We and States are unhappy with results</td>
<td>3. Expensive, proprietary, contractor centric</td>
<td>3. Decisions are not data driven</td>
</tr>
</tbody>
</table>

CMS

[Image: Centers for Medicare & Medicaid Services]
Vision for Medicaid and Chip Data

“High Performing Medicaid & CHIP Programs”

Resources are shrinking and data driven decisions need to be made to ensure value in health care services.

<table>
<thead>
<tr>
<th>Tomorrow’s Vision</th>
<th>Tomorrow’s Technology</th>
<th>Tomorrow’s Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Medicaid and CHIP state data set complete and</td>
<td>1. A scalable, responsive, flexible, multi-user, and</td>
<td>1. Federal and state reports are the same, correct and</td>
</tr>
<tr>
<td>current</td>
<td>sustainable platform</td>
<td>contemporary</td>
</tr>
<tr>
<td>2. Federal and States are happy with LOE and results</td>
<td>2. Multiple database interconnectivity</td>
<td>2. We can readily determine the cost, integrity or value</td>
</tr>
<tr>
<td>3. Decisions can be made based on facts/information</td>
<td>3. Affordable, open source to extent possible</td>
<td>of the purchased service</td>
</tr>
</tbody>
</table>

Tomorrow’s Vision:

1. Medicaid and CHIP state data set complete and current
2. Federal and States are happy with LOE and results
3. Decisions can be made based on facts/information

Tomorrow’s Technology:

1. A scalable, responsive, flexible, multi-user, and sustainable platform
2. Multiple database interconnectivity
3. Affordable, open source to extent possible

Tomorrow’s Results:

1. Federal and state reports are the same, correct and contemporary
2. We can readily determine the cost, integrity or value of the purchased service
3. Decisions are data driven
Imagine the Analytic Possibilities
National/Cross State Comparisons

MACBIS Ten-States Summary For Year 2019

States: State A, State B, State C

**Expenditures**

- Total Medicaid Paid: $30,982,230.85
- Total FFS Payment: $17,722,310.81
- Total LT FFS Payment: $1,482,040.00
- Total Medicare Payment: $1,474,230.00

**Beneficiaries by Age**

- Age 0 to 20: 8,433,126
- Age 21 to 64: 5,152,110
- Age 65 and over: 3,872,115

**Beneficiary Expenditures**

- Total Beneficiary Expenditures: $30,982,230.85
- Total FFS Beneficiary Expenditures: $17,722,310.81
- Total LT FFS Beneficiary Expenditures: $1,482,040.00

**Providers**

- Total Providers: 271,004
- Total Inpatient Hospital: 43,183
- Total Outpatient Hospital: 8,822

**Top Expenditures by Provider**

- Total Medicaid: $18,231,972
- Total Medicare: $18,238,445

**Dual Providers**

- Total: 3,375
  - FFS: 2,084
  - MC: 701

**Provider Information**

- Capitalized Care: 15,000
- Home Health: 5,000
- Physical Therapy: 12,000

**Beneficiary Information**

- Medicare Cost: $1,050,000
- Medicaid Cost: $1,045,100

**Dual Provider Information**

- Medicare Cost: $8,236,00
- Medicaid Cost: $8,100

**Provider Expenditures**

- Total: $30,982,230.85
- FFS: $17,722,310.81
- LT FFS: $1,482,040.00

**Centers for Medicare & Medicaid Services (CMS)**
Realizing the Vision
Medicaid and CHIP Business Information Solutions (MACBIS)

TODAY ISSUES
- Incomplete Data
- Custom Data Validation
- Limited Analytics
- Data Silo’ed
- Limited State Integration

TOMORROW SOLUTIONS
- Robust Data
- Data Validation/Rule Engine
- Business Intelligence/Reporting
- Data Integration
- Comprehensive State Integration

Establish Plan
Execute Transition

TODAY ISSUES

Incomplete Data
Custom Data Validation
Limited Analytics
Data Silo’ed
Limited State Integration

TOMORROW SOLUTIONS

Robust Data
Data Validation/Rule Engine
Business Intelligence/Reporting
Data Integration
Comprehensive State Integration

DEMONSTRATE!!

Enterprise Medicaid and CHIP

T-MSIS
Future - MACPRO
Future
Future

Legacy Medicaid and CHIP

MSIS
PERM
WMS
MFP
Etc.
MACBIS - “Enterprise” Medicaid and CHIP Data Environment (MACDE)

Development of robust analytical capacity, including canned reports and flexible Business Intelligence (BI) interface for CMS and state data users covering the national view of Medicaid and CHIP integrated with Medicare data.

Integrated and Aligned Federal and State Data sources through a set of reporting and analytic tools:
• Program (MACPro),
• Quality,
• Performance, and
• Operational (beneficiary, provider, health plan, and claim/encounter – “T-MSIS”)

CMS
CENTERS FOR MEDICARE & MEDICAID SERVICES
CENTER FOR MEDICAID & CHIP SERVICES
MSIS vs. T-MSIS

“As Is” MSIS

- 200+ Elements
- Quarterly Submissions
- Poor Data Quality
- Limiting Data Analytics
  - Lack of data integration
  - State accessibility

“To-Be” T-MSIS

- 600+ Elements
  - New: Provider file
  - New: TPL file
  - New: Managed Care Plan file
- Monthly Submissions
- Data Validation Requirements
  (Tier 1, 2, 3 edits – state requirements)
- Robust Data Analytics
  - MACBIS data integration
  - State access – national data integration
T-MSIS Driven Analytic Possibilities – the Future

• Eligibility and Enrollment Analytics
• Claims and Encounter Analytics
• Provider Analytics
• Managed Care Data Analytics
New Capabilities in T-MSIS - Eligibility

• Existing file with records for each person enrolled in Medicaid and CHIP

• Major changes include:
  • Enrollment transactions submitted monthly (previously submitted quarterly)
  • Citizenship and immigration status
  • Disability status
  • Expanded information on special programs/waivers (e.g. Money Follows the Person)
  • Expanded demographic information
  • Long-term eligibility arrangement
Potential Phase One Analyses – Eligibility

• Display enrollees by characteristics including:
  • Demographics
  • Eligibility categories, including CHIP
  • Delivery system (fee-for-service vs. managed care)
  • Disability status
  • Dual status
  • Daily living arrangement status (hospital, long-term care facility, community)
• Calculate enrollee “churn” between Medicaid and CHIP within a state
• National and cross-state comparisons on analytics
Potential Phase One Analyses (cont.) – Eligibility

- Identify top beneficiary expenditures for long-term care, inpatient care, and pharmacy utilization. Display results by demographics, eligibility, disability, and dual status.

- Identify beneficiary disease prevalence (top diagnoses from claims) by demographics and program participation.

- Identify hospital utilization rates for similar client demographic populations.
New Capabilities in T-MSIS – Claims and Encounters

- Major changes include:
  - Claims and encounter transactions submitted monthly (previously submitted quarterly)
  - Complete reporting for encounter records (prepaid managed care)
  - Payment amount or FFS equivalent payment value for encounter records
  - Some patient status measures (e.g. BMI, birth weight)
  - Expanded diagnosis and procedure codes
  - ICD-9 → ICD-10
  - Elements to support expanded program integrity analysis
Potential Phase One Analyses - Claims and Encounters

- System will use most current view of claims, whether claims have been adjusted or not.
- User can adjust claims views by payment date or service delivery date.
- Standard reports, organized by service type or beneficiary type serviced include:
  - Paid and Charged amounts
  - Medicaid fee-for-service equivalent payment amount (for prepaid managed care claims)
  - Third party liability amount
  - Crossover Medicaid/Medicare claims
  - Top 5-10 most common primary diagnoses
  - Top 5-10 most common comorbidities
- Generate Data to Populate Portions of EPSDT report
New Capabilities in T-MSIS - Providers

- New file with a record for each provider serving Medicaid enrollees (in-state and out-of-state providers), including NPI linkable to claims and encounter records
- Data elements include:
  - Multiple billing and practice locations
  - Provider type and specialty
  - Group or association affiliation
  - Licensing/licensure(s) with status
Potential Phase One Analyses – Providers

- Identify, link, and aggregate type of provider (physicians (by specialty), hospitals, long-term care facilities, home health, etc.)
  - Provider types would be identified using the Payment Error Rate Measurement (PERM) provider type rollups.
  - Distinguish Medicaid from CHIP providers
  - Identify providers enrolled in both Medicare and Medicaid
  - Flag whether providers are reimbursed on fee-for-service, capitated basis, or other arrangement
- Identify locations where the provider practices
Potential Phase One Analyses (cont.) – Providers

- Tabulate number of claims by provider, including adjustments
- Tabulate total reimbursements by provider, including claims and adjustments
- Trend prescribing behavior and identify high-volume prescribers (physicians)
- Standard provider measures available:
  - Enrollees and/or recipients per provider by provider type
  - Enrollee/physician rates for sub-state market areas
  - Participating nursing facility beds per 1,000 enrollees
Managed Care Data in T-MSIS

• Enrollment - Up to four plans per month and National Health Plan Identifier (NHPI)

• Services – Encounter records for all services, all plans

• New File: Managed Care Plans – Includes: type, name, covered eligibility groups, service area, NHPI, and reimbursement arrangement (e.g. risk-based, non risk-based, PCCM, etc.)
Managed Care Analytic Possibilities: Ex. 1 Data-Driven PMPM* Rate Setting

- States with no prior managed care experience or expanding coverage under managed care
  - Use the state’s fee-for-service data
  - Use another state’s managed care data
- Use a data-driven approach to set PMPM rates using state or national views of data
  - Populations to include in managed care
  - Volatility of expenditures for some enrollee groups (e.g. aged, disabled, and long-term care populations)
  - Setting realistic premiums
  - Encouraging plan participation and profitability
  - Eliminating excess plan profit and cost to the state
Managed Care Analytic Possibilities: Ex. 2 Geographic Issues in Managed Care

• Many plans are not statewide

• Important to measure use and expenditure variation
  • By enrollee demographics and eligibility group
  • By sub-state geographic area

• Analytic focus on sub-state areas
Expanding the Power of Data via MACDE

What if I could integrate Program Data with Operational Data? Creation of key relationships between operational and program data, such as the following:

- Beneficiary and program
- Beneficiary and health plan
- Beneficiary and provider
- Beneficiary and claim/encounter
- Provider and program
- Provider and health plan
- Provider and claim/encounter
- Program and health plan
- Program and claim/encounter
- Health plan and claim/encounter
Operational/Program Analytic Possibilities

• Assess the quality of services and outcomes delivered by a provider or through a program for the cost(s) of the service(s)

• Identify individuals transitioning across health care settings and providers

• Determine the positive and negative impacts of health care delivery reform such as improved outcomes and contracting health care acquired conditions

So that we can:
- Evaluate Demonstration Programs (i.e. CMMI Models)
- Monitor Program Integrity
- Assess Program Evaluation
Operational/Program Analytic Possibilities

Users will be able to perform aggregate analysis:

- Above the program level (multiple programs; state, regional, and national analyses)

- Across programs (analysis of all Medicaid and CHIP beneficiaries with a particular health condition)

- Analysis within a program (by geographic area, type of provider, provider, and so forth)
Realizing the Analytic Possibilities

<table>
<thead>
<tr>
<th>Beneficiary Information</th>
<th>Provider Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expenditures</td>
<td></td>
</tr>
<tr>
<td>Total Medicaid FFS:</td>
<td></td>
</tr>
<tr>
<td>Total Managed Care:</td>
<td></td>
</tr>
<tr>
<td>Managed Care Beneficiaries:</td>
<td></td>
</tr>
<tr>
<td>Total FFS Payment:</td>
<td></td>
</tr>
<tr>
<td>FFS Beneficiaries:</td>
<td></td>
</tr>
<tr>
<td>Total LT FFS Payment:</td>
<td></td>
</tr>
<tr>
<td>LT FFS Beneficiaries:</td>
<td></td>
</tr>
<tr>
<td>Total FFS Payment:</td>
<td></td>
</tr>
<tr>
<td>FFS Beneficiaries:</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Providers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Providers:</td>
</tr>
<tr>
<td>Capitalized Care:</td>
</tr>
<tr>
<td>Clinic Svcs:</td>
</tr>
<tr>
<td>Dental Svcs:</td>
</tr>
<tr>
<td>Home Health Svcs:</td>
</tr>
<tr>
<td>Lab Svcs:</td>
</tr>
<tr>
<td>Inpatient Hospital Svcs:</td>
</tr>
<tr>
<td>Outpatient Hospital Svcs:</td>
</tr>
<tr>
<td>Personal Support Svcs:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Beneficiary by Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Beneficiaries:</td>
</tr>
<tr>
<td>Age 0 to 20:</td>
</tr>
<tr>
<td>Age 21 to 64:</td>
</tr>
<tr>
<td>Age 65+</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dual Provider Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total: 9,735</td>
</tr>
<tr>
<td>FFS: 3,034</td>
</tr>
<tr>
<td>MC: 671</td>
</tr>
<tr>
<td>Other: 6,030</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Top Expenditures by Provider</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total: $1,000,000,000</td>
</tr>
<tr>
<td>Medicaid: $500,000,000</td>
</tr>
</tbody>
</table>

CMS | Center for Medicare & Medicaid Services
28
Realizing the Analytic Possibilities
State/Regions/National Comparisons

Expenditures
- State A
  - Gross Total Medicaid Paid: $7,086,524,209.00
  - Total Managed Care Payment: $6,259,144,272.00
  - Managed Care Beneficiaries Served: 1,457,260
  - Total FFS Payment: $1,828,379,928.00
  - FFS Beneficiaries Served: 1,704,071
  - Total LT FFS Payment: $3,610,553.00
  - Beneficiaries Served: 29,566
  - Total OT FFS Payment: $612,469,181.00
  - Beneficiaries Served: 7,450
  - Total RX FFS Payment: $768,087,849.00
  - Beneficiaries Served: 603,000

- State B
  - Gross Total Medicaid Paid: $16,253,197,006.00
  - Total Managed Care Payment: $6,884,992,008.00
  - Managed Care Beneficiaries Served: 3,400,000
  - Total FFS Payment: $11,368,204,172.00
  - FFS Beneficiaries Served: 4,990,779
  - Total LT FFS Payment: $1,888,237,922.00
  - Beneficiaries Served: 416,206
  - Total OT FFS Payment: $7,416,733,225.00
  - Beneficiaries Served: 7,943
  - Total RX FFS Payment: $2,273,290,106.00
  - Beneficiaries Served: 2,061,000

Beneficiaries by Age
- State A
  - Total Beneficiary Count: 1,851,000
  - Age 0 To 29: 1,153,351
  - Age 30 To 64: 715,646
  - Age 65 & over: 47,433
  - Beneficiary Expenditure: $7,086,524,209.00
    - Age 0 To 29: $3,400,000,000
    - Age 30 To 64: $3,577,289
    - Age 65 & over: $1,153,351

- State B
  - Total Beneficiary Count: 5,817,125
  - Age 0 To 29: 3,577,289
  - Age 30 To 64: 1,153,351
  - Age 65 & over: 230,472
  - Beneficiary Expenditure: $18,263,767,208.00
    - Age 0 To 29: $7,000,000,000
    - Age 30 To 64: $3,577,289
    - Age 65 & over: $1,153,351
Other Resources

www.CMS.gov  - Centers for Medicaid and Medicare (CMS) Home Page

QUESTIONS

Arun Natarajan
410-786-7455
Arun.natarajan@cms.hhs.gov
Appendix A - Types of Reporting Available through MACDE with T-MSIS Data

Provider Data – Performance Summary Reports, Performance Data Reports, Claims Activity Report, Institutional/HCBS Trends Report, Claims Data Matched to Program Reports, Provider Trends Reports, Outcomes Reports on Individuals, Providers, Services and Programs.

Claims Activity Reports – Performance Summary Reports, Performance Data Reports, Claims Activity Reports, Institutional / HCBS Trends Report, Expenditures Reports (CMS 64), Integrated Trends and Program Reports, Provider Trend Reports, Coverage Summary Reports by State and Programs, Program Management Reports, and Outcomes Reports on Individuals, Providers, Services and Programs.