How Data Quality Drives Value Across the Healthcare Enterprise

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Learning Objectives

During this webinar, you’ll learn how improving data quality can drive value across the enterprise by:

• Providing capabilities that address the needs of IT as well as clinical and business people, and help them better collaborate to ensure data is fit for use

• Fitting into the context of larger initiatives like analytics, data governance, regulatory compliance, and master data management

• Aggregating the right data to demonstrate value using business metrics that matter
Today’s Agenda

<table>
<thead>
<tr>
<th></th>
<th>Introduction to Commonwealth Care Alliance</th>
<th>Business and Clinical Impact or Poor Data Quality</th>
<th>Where Does Data Quality Fit?</th>
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<td>Initial Use-Case for Data Quality</td>
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<td>7</td>
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</tbody>
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Improving care for people with disabilities and chronic health needs
Who are we?

Based in Massachusetts, Commonwealth Care Alliance (CCA) is a not-for-profit, community-based healthcare organization dedicated to improving care for individuals who are dually eligible for MassHealth (Medicaid) and Medicare with complex medical, behavioral health and social needs, including those with disabilities.
Products

• Senior Care Options (SCO) 10,866 members
  • Created in 2004 with MassHeath CMS partnership
  • Eligibility: 65 with MassHealth
  • 75% are eligible for nursing facility care
  • With CCA/SCO they can stay in their communities
  • 70% 4+ chronic conditions

• One Care (ICO) 21,715 members
  • National demonstration under ACA
  • Eligibility: 21-64 yr, no other ins, Eligible for both MassHealth/Medicare
  • 74% BH diagnosis
  • 8% homeless
  • 31.2% current/past substance use disorder
CCA
Organization History

2003
- CCA’s co-founders, Bob Master, MD and Lois Simon submit application to become a Medicare and Medicaid SCO contractor

2004
- CMS officially approves 80 SCO members on July 1, 2004, including 45 at Brightwood Health Center

2013
- CCA is the first entrant in the nation into the Duals Demonstration as a One Care Plan

2015
- Chris Palmieri joins CCA as President and CEO

Now
- CCA is a national leader in care for populations with complex needs; the largest One Care plan in MA; and ~31,000 members
CCA Locations and Facilities

- **Commonwealth Care Alliance Offices**
  - Downtown Boston (3 locations)
  - Charlestown
  - Springfield

- **Commonwealth Community Care**
  - Boston
  - Lawrence
  - Framingham
  - Springfield

- **Community Respite Facilities**
  - Brighton
  - Dorchester

CCA and CCC Service Areas
How Do One Care and SCO Work?

- Financially Integrated Care Delivery
- Health Plan
- Care Management
- Primary Care
Health Care System Needs CCA

Why does health care need CCA?
- Complex member needs can’t be met by traditional 15-minute office visits
- Inaccessible delivery models result in high acute care use and poor health outcomes

1% of MA Medicaid population accounts for ~15% of spending

5% of nationwide Medicaid population accounts for 53% of spending

<table>
<thead>
<tr>
<th>Total Enrollees</th>
<th>Total Expenditures</th>
</tr>
</thead>
<tbody>
<tr>
<td>68.0 million</td>
<td>$397.6 billion</td>
</tr>
</tbody>
</table>
Member Stories

Keisha's Story
“My MD is progressing, but CCA is helping me. My family is very supportive. My mom is nearby. We talk every day. My cousins are always helping me.”

Aida's Story
“I have better care, so I feel better.” Together, Aida and her CCA care team were able to get her diabetes under control and address her other chronic medical issues.

Bill's Story
In 1977, when Bill was 18 years old and just out of high school, he became paralyzed following a motorcycle accident. For 37 years he had to deal with a fragmented healthcare system that didn’t meet his needs, and that wasn’t easy. Then everything changed for Bill when he joined CCA’s One Care program in 2013.

Leslie's Story
Leslie J., a 55-year-old woman living on her own in western Massachusetts, joined our One Care program soon after its launch in 2013. Years later, she knows she made the right choice. Leslie says, “CCA gives me extra support I can count on when I need it, as long as I need it.”
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“We have a data quality problem…”
Components of Every Solution

PEOPLE

PROCESS

TECHNOLOGY
Components of Every Solution

- PEOPLE
- PROCESS
- TECHNOLOGY
- DATA
Every Business is Becoming a Data Business
Generational Market Shift in Data Management

1.0
Data used in specific business applications

2.0
Data used to support enterprise-wide business processes

3.0
Data powers digital transformation
Data is the foundation for digital transformation
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Tech Stack

Informatica Data Profiling, ETL, DQ and MDM

Current Connection

Future Potential – tool standardization:
Informatica Data Profiling, ETL, DQ and MDM
Capabilities we do not have

- Automated Data Profiling
  - CCA engaged Teradata to do this manually for medical claims data in 2018 at a cost of over $50k
  - No reusability for other areas
- Consistently check for Data rules. For example: Claim should always have a DOS, Pharmacy claims should have a valid NDC number, Medical claims should be for a member who is active at DOS etc.
- Provide reporting/dashboards for business owners to PROACVITELY identify issues
How Informatica fits in

- Top Industry tool: Gartner has recognized Informatica as a leader and a visionary (in their Magic Quadrant) for 11 years in a row

- Tool:
  - Can access, apply DQ rules to a wide range of data sources
  - Gives IT and business insight into quality of data and ability to cleanse
  - Helps CCA identify and understand data quality issues so we can proactively address
  - Monitor and measure ongoing assurance of data quality, reusable rules
  - Can apply standards to data (i.e. all dates are mm/dd/yyyy) and values
  - Can link and merge data across systems avoiding the need for custom code
  - Scalable to large data volumes as CCA grows, especially useful with new data sources (ACO)
  - Address validation and geocoding is available to replace overlaps between Melissa and Lexis-Nexis
Data Profiling Examples
Data Profiling – Member/MP – DATE_SPAN table

<table>
<thead>
<tr>
<th>Column</th>
<th>Nulls</th>
<th>Non-Nulls</th>
<th>Non-Null %</th>
<th>Values (min ~ max)</th>
<th>Pattern</th>
<th>Length (min ~ max)</th>
<th>Data Type</th>
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</thead>
<tbody>
<tr>
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<tr>
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<td>date</td>
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<td>100</td>
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<td>0900100019800000 ~ 0900100019800000</td>
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<td>13 ~ 13</td>
<td>DATE</td>
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<tr>
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<td>VARCHAR</td>
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<tr>
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<td>date</td>
<td>13 ~ 13</td>
<td>DATE</td>
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</tbody>
</table>

SPAN ID – all populated
NAME_ID – ZERO Nulls/blank
EXTRA_ID – ZERO Nulls/blank
CARD TYPE – not very many values?
Card Type

<table>
<thead>
<tr>
<th>Total rows</th>
<th>1000</th>
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</thead>
<tbody>
<tr>
<td>Null</td>
<td>0</td>
</tr>
<tr>
<td>Distinct</td>
<td>2</td>
</tr>
<tr>
<td>Non-distinct</td>
<td>998</td>
</tr>
</tbody>
</table>

Add Tag | Add Comment

Datatype

<table>
<thead>
<tr>
<th>Datatype</th>
<th>Documented</th>
<th>Value</th>
<th>Frequency</th>
<th>Length</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>varchar(100)</td>
<td></td>
<td>MCAID App</td>
<td>834</td>
<td>9</td>
<td>83.40%</td>
</tr>
<tr>
<td>String(12)</td>
<td>100.00%</td>
<td>REFERRAL App</td>
<td>166</td>
<td>12</td>
<td>16.60%</td>
</tr>
</tbody>
</table>

Length (min -> max) 9 -> 12
Value (min -> max) MCAID App -> REFERRAL App
Average: 0 | Sum: | Standard Deviation: 0
Enrolled members must have a CCA ID

This shows us that 4 Members in our member system are “invalid” and do not have a CCA ID, for this specific rule.
Drill thru to detail
Payment Method: ACH & Check….but “Non” value?
## Mail Date –

### General

- **Total rows**: 87149
- **Null**: 83896 (96.26%)
- **Distinct**: 1 (0.01%)
- **Non-distinct**: 3252 (3.73%)

### Values

1 distinct values (1 Non-unique, 0 Unique)

<table>
<thead>
<tr>
<th>Value</th>
<th>Frequency</th>
<th>Length</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>NULL</td>
<td>83896</td>
<td>0</td>
<td>96.27%</td>
</tr>
</tbody>
</table>

- **Value**: `NULL`
- **Frequency**: 83896
- **Length**: 0
- **Percentage**: 96.27%

### Datatype

- **String(8)**
  - `Date/yyyy/mm/dd`: 100.00%
  - `Decimal(8)`: 100.00%
  - `Fixed Length String(8)`: 100.00%
  - `Integer(8)`: 100.00%
  - `String(8)`: 100.00%

### Data Preview

- **Length (min -> max)**: 8 → 8
- **Value (min -> max)**: 20190419 → 20190419
- **Average**: 0 | **Sum**: | **Standard Deviation**: 0
Referential Integrity Check on EDW Party table:
Do all Party Identification records have a valid Party ID
Data Profiling Conclusion

• Able to automate data discovery
• Speeds up Onboarding of new data sources
• Rules – check data as it comes in

• Next up
  • Larger emphasis on Data Governance
  • Business Glossary and Data Dictionary documentation
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Processes and systems work together. The same systems, interfaces and information are often used by many processes.
Data Stewardship & Informatica Data Quality

Discover
- Discovery Search
- Data Profiling
- Enterprise and Domain Discovery

Define
- Reference Tables
- Rules & Rule Builder
- Mapping Specification

Apply
- Mapping Generation
- Standardization / Validation
- Matching / Consolidation
- Exception Management

Manage & Monitor
- Data Lineage / Impact Analysis
- Scorecards

Collaboration
- Business
- Technology
Every Business is a Data Business

DATA

PEOPLE

PROCESS

TECHNOLOGY
Thank You