



Ensure Claims and Provider Data Quality for Analytics

Agenda

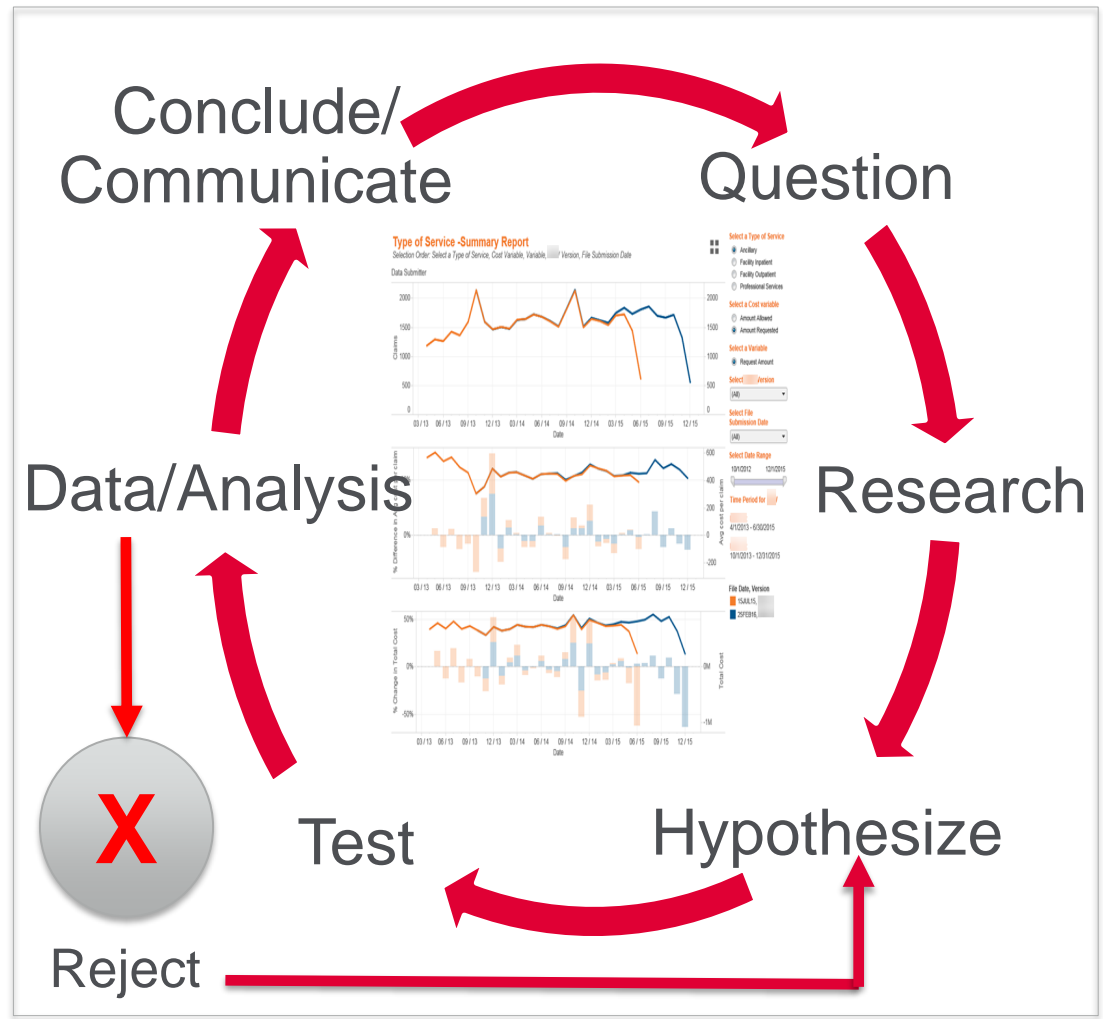
- Applying the Scientific Method to Data Quality
- A Five Step Approach to Testing Data Quality
 - Structural & Layout Compliance
 - Key Field Completeness and Uniqueness
 - Code and Value Validity
 - Data Reasonableness and Appropriateness
 - Referential Integrity

Applying the Scientific Method to Data Quality Analysis

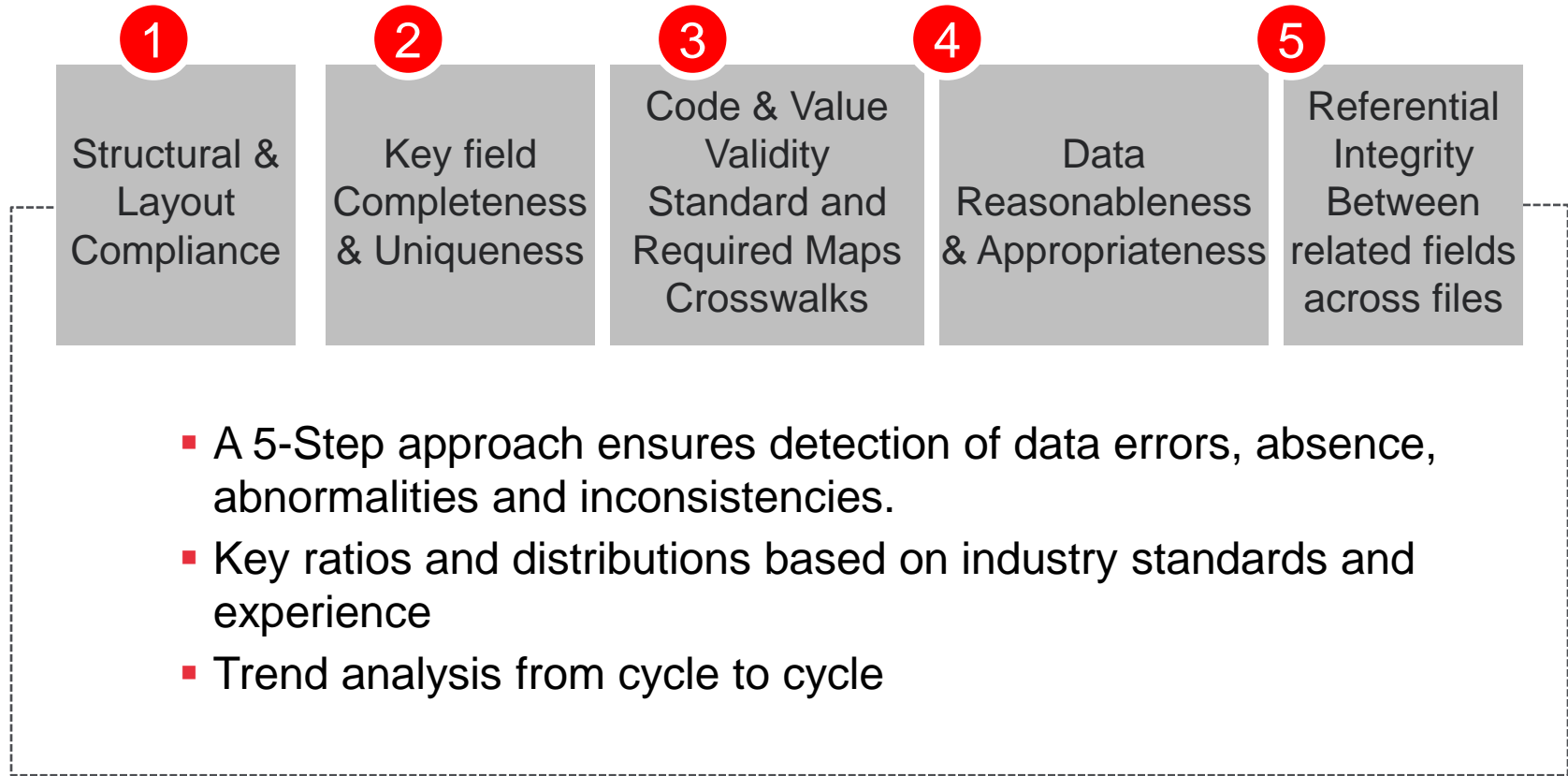
The Scientific Method can be applied to a data quality assurance process.

The process should be:

- Thorough
- Repeatable
- Timely
- Intuitive
- Responsive (feedback loop)



Data Quality Assurance (QA)



Data Quality Assurance Tools and Techniques

Select the right mix of data tools for efficient processing, analysis and communication

- Data Analysis: SAS, Python, SQL ...
- Statistical packages: SAS, R, SPSS ...
- Data Visualization: Tableau, Domo, Power BI ...

Key Field Completeness And Uniqueness

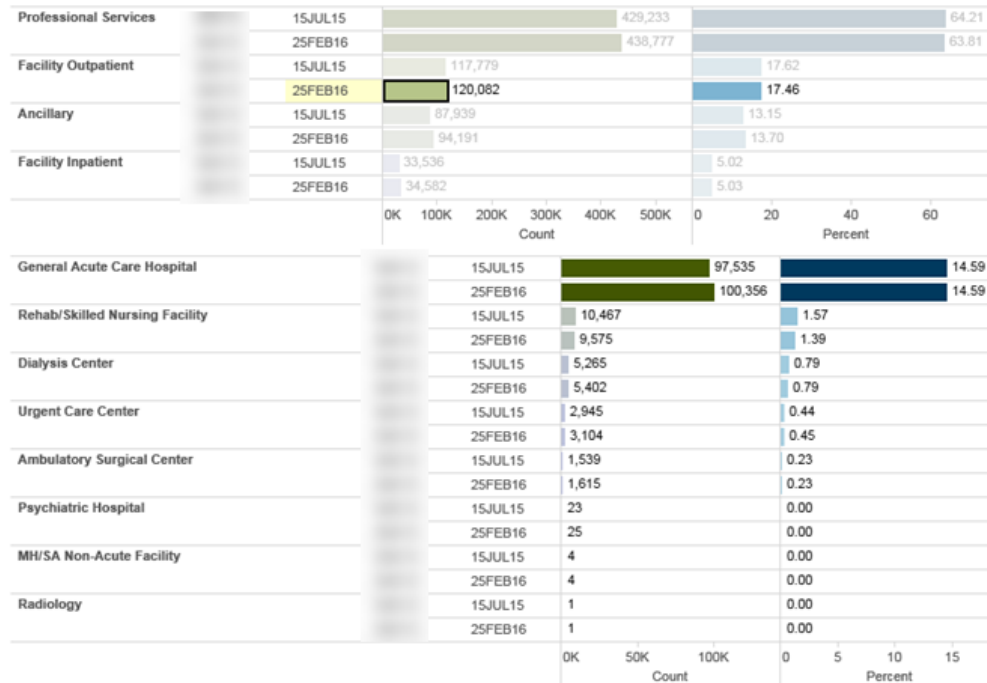
Select key fields to measure completeness and consistency

Drill down to second level attributes to identify outliers and investigate unexpected volume shifts

Key Field Distribution Report

Selection Order: Claim Type, Type of Service, Variable, /ersion, File Submission Date
[Click on a bar to drill down to Details](#)

Summary Report



Select a Claim Type

- (All)
- Facility
- Professional

Apply Cancel

Select a Type of Service

- Type of Service I
- Type of Service II

Select Variable

- Place of Service Level I
- Procedure Code Level I
- Specialty Level I

Select DMV Version

(All) ▼

Select File Submission Date

(All) ▼

Code and Value Validity

Check data elements and values against industry standard references.

This will also require payer-specific references for state-specific and MCO-specific values.

Frequency Distribution for Valid Values Report

Selection Order: Claim Type, Variable, Valid Value Flag, File Submission Date

Search Code and Description

Data Submitter

| Code and Description | Version | Valid Val. | Filedate | Count | Number of Records |
|--|---------|------------|----------|--------|-------------------|
| - Incorrect | | Invalid | 15JUL15 | 50,881 | 1 |
| | | Invalid | 25FEB16 | 52,987 | 1 |
| 0159T - COMPUTER AIDED DETECTION BREAS | | Valid | 15JUL15 | 17 | 1 |
| | | Valid | 25FEB16 | 19 | 1 |
| 0191T - ANT SEGMENT INSERTION DRAINAGE | | Valid | 15JUL15 | 2 | 1 |
| 0296T - EXT ECG > 48HR TO 21 DAY RCRD | | Valid | 15JUL15 | 4 | 1 |
| | | Valid | 25FEB16 | 4 | 1 |
| 00103 - ANESTHESIA EYELID RECONSTRUCTI | | Valid | 15JUL15 | 2 | 1 |
| | | Valid | 25FEB16 | 3 | 1 |
| 00142 - ANESTHESIA EYE LENS SURGERY | | Valid | 15JUL15 | 87 | 1 |
| | | Valid | 25FEB16 | 109 | 1 |
| 00170 - ANESTHESIA INTRAORAL WITH BIOP | | Valid | 15JUL15 | 1 | 1 |
| | | Valid | 25FEB16 | 1 | 1 |

Select a Claim Type

- Professional
- Facility
- All Others

Select a Variable

f_procedure code

Select a Valid Value Flag

- (All)
- Valid
- Invalid

Apply Cancel

Select Version

(All)

Select File Submission Date

(All)

Valid Value Flag

Valid

Invalid

Data Reasonability and Appropriateness

Type of Service -Summary Report

Selection Order: Select a Type of Service, Cost Variable, Variable, Version, File Submission Date

Data Submitter



Select a Type of Service

- Ancillary
- Facility Inpatient
- Facility Outpatient
- Professional Services

Select a Cost variable

- Amount Allowed
- Amount Requested

Select a Variable

- Request Amount

Select /version

(All)

Select File Submission Date

(All)

Select Date Range

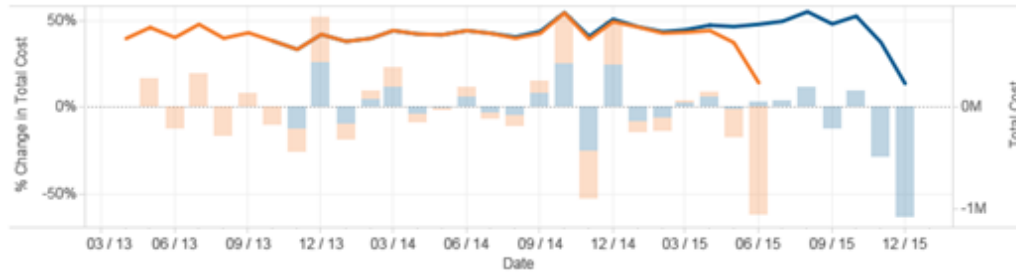
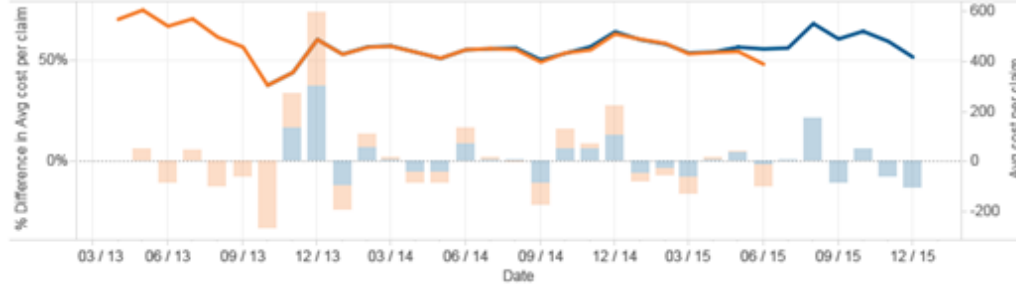
10/1/2012 12/1/2015

Time Period for

- 4/1/2013 - 6/30/2015
- 10/1/2013 - 12/31/2015

File Date, Version

- 15JUL15
- 25FEB16



Control Total Run Chart:
- # of Claims

Run Chart:
- % Difference in average cost per claim

Run Chart:
- % Difference in total cost per claim

Referential Integrity Between Datasets, Tables and Fields

Test the integrity between multiple data sets.
(e.g. Provider/Member/Claims)

Integrity Check Report

The integrity table report provides various counts from Table 1 and Table2 with given condition that holds true and joined on specific fields as shown.
Selection Order: Version and File Submission date

Select Version Select File Submission Date

(All) (All)

Data Submitter

| When values in Table 1 as below ... | are compared to values in Table 2 as below ... | and the condition in Table 1 is ... | and the condition in Table 2 is ... | and the two tables are joined on this field; then ... | Version | File Date | Tname2 | Unique count in Table 1 | Unique Count in Table 2 |
|-------------------------------------|--|-------------------------------------|-------------------------------------|---|---------|-----------|--------|-------------------------|-------------------------|
| Medical Claims | Membership | none | none | Member | | 15JUL15 | _elig | 8,281 | 9,226 |
| | | | | | | 25FEB16 | _elig | 8,549 | 9,457 |
| Provider | Medical Claims | none | none | serv_prv_npi=linkage_id | | 25FEB16 | _prv | 1,543 | 342,840 |
| | | | | serv_prv=linkage_id | | 15JUL15 | _prv | 1,556 | 1,965 |
| Membership | Medical Claims | covclass='MED' | covclass='MED' | Member | | 15JUL15 | _med | 5,707 | 4,850 |
| | | covclass='SUP' | covclass='SUP' | Member | | 25FEB16 | _med | 5,883 | 5,072 |
| | | | | | | 15JUL15 | _med | 3,550 | 3,460 |

Q&A

▼ The Lewin Group

Dave Schafer MHA,
Suman Challagulla MS,
Steve Johnson Ph.D
dave.schafer@lewin.com