Overcoming the Challenges of Dirty Data: Assuring Accurate Patient Identity

CTHIMA Annual Meeting
September 17, 2017
Learning Objectives

✓ Appreciate MPI integrity challenges
✓ Recognize importance of accurate patient identity
✓ Understand operational impacts
✓ Know how to mitigate issues
MPI – Foundational Backbone

- EHR
- Compliant coding/billing
- Analytics
- Legal medical record
- Research
- HIE
MPI Integrity Challenges
Challenges

➢ Mergers/Affiliations – accelerated timelines
➢ System conversions
➢ Sub optimal matching algorithms
➢ Additional data attributes needed
➢ Fear of identity theft
Challenges

- Assessing “current state” MPI data
- “Shell” records
- ACO/payer files lack key data
- IT Projects – minimal stakeholder input
- Registration silo’s
How did MPI data get so dirty??

- Legacy data silos
- Data conversions
- Diverse data – 80% unstructured
- Varying data field formats
- Lack of standardization
- Inadequate messaging configurations
Data Capture Dilemma's

Demographic data:

- Changes (i.e. last name)
- Incomplete (i.e. middle name)
- Inaccurate (misspellings, transpositions, typographical errors, nicknames)
- Sites collect different data points
- Addresses not standardized
- Name swaps
- Temporary registrations
MPI Data Discrepancies

• *JA study w/ College of St. Scholastica (398,939 confirmed duplicate pairs)*
  - Data discrepancies due to blanks/defaults/typos in key fields – 95%
  - MN and SSN – most frequent mismatching fields
  - Name field – still huge issue

• *~28%* of all records within an Enterprise Master Patient Index have errors in at least one of five core patient identifier fields:
  - Last Name, First Name, Date of Birth, Social Security Number or Gender

The gift that keeps on giving!

Duplicate Existence Rates

Hospitals
.01% – 57%

IDN’s
4% – 74%
QUALITY AND OPERATIONAL IMPACTS of “Dirty” MPI Data
Quality of Patient Care

- Repeat diagnostic tests - original results not found
- Drug interaction risks - medications unknown
- Critical diagnoses & treatment delays
- Unnecessary invasive procedure exposure
Identity Errors – Staggering Facts

➢ Of 400K medical error deaths/yr. – approximately 195K due to *identity errors*

➢ U.S. Death data study – 251K annual deaths due to medical errors

Has your hospital incurred an adverse event due to a patient mismatch in the last year?

- Yes: 19%
- No: 81%

For this survey’s purposes, “adverse” is defined as a negative consequence of care that results in unintended injury or illness.
Operational Impacts

- ACO’s – patient attribution (one record)
- Access – patient portals
- Downstream system impacts
- HIE/HIO adoption
- Payment delays/denials
- Bad debt collections
- Release of information errors
- Identity errors – costly to resolve
Operational Impacts

Translating into real costs...

- A duplicate record - $20 to $200+.
- Texas Health Partners - $600-$800 to remediate duplicate patient issues
- Sharp HealthCare - 10 FTEs to clean up duplicate records - annual cost ~ $1M
Operational Impacts

CHIME 2016:
- Intermountain spends $4-5 million annually on technology and processes to ensure proper patient identification

ONC 2014 Report:
- Mayo estimated each misidentification costs $1200.00
- Intermountain estimated $60.00 in operational costs to fix a duplicate record

Rand 2008 Report:
- $8 billion annually - estimated total cost to healthcare system
Denied Claims – Big Losses

On average, 35% of denied claims result directly from inaccurate patient identification or inaccurate/incomplete patient information, costing the average healthcare facility $1.2M/year.

*Ponemon Institute, Dec 2016*
Operational Impacts

What leads to patient misidentification? (Per report…)

- Inability to find patient’s medical record (68%)
- Search resulting in multiple or duplicate medical records for patient (67%)
- Patient associated with incorrect record due to same name and/or date of birth (56%)
- Wrong record pulled up in registration due to same name and/or date of birth (61%)
Operational Impacts

Per report...

➢ Denied claims due to misidentification issues (~35%)  
➢ Est value = $17,422,750  
➢ Claims successfully appealed (93%) 
➢ Est value of denials unsuccessfully appealed or dropped = $1,219,592
Mitigating Issues / Improvement Suggestions
Action Step – 1

Ensure MPI is CLEAN!
MPI Clean Up

• Assess “current state”
• Assess matching algorithms
• Clean up pre-conversions
• IT projects → catalyst
Action Step – 2

Enhance Management Focus: Data Integrity Operations

Leadership
HIM Data Integrity Operations

➢ Track MPI errors by user/area
➢ Create duplicate validity procedure
➢ Ensure task prioritization
➢ Assess duplicate and creation rates
➢ Assess overlay creation rate
Duplicate Rate Calculation

Total Number of Potential Duplicate Patient Records

\[ \text{Total Number of Patient Records in the MPI Database} \]

\[ \times 100 \]

Example:

10,000 possible pairs, involving 20,000 individual records

Database contains 500,000 individual records

Duplicate rate computed by dividing 20,000 / 500,000 x 100

Percent duplicate is 4%

Industry Goal: 2% or less

Duplicate Creation Rate Calculation

Total Number of Confirmed Individual Duplicate Patient Records For a Defined Time Period

\[
\frac{\text{Total Number of Confirmed Individual Duplicate Patient Records}}{\text{Total Number of Registration, Pre-Registration, or Scheduling Events within the Same Time Period}} \times 100
\]

Total Number of Registration, Pre-Registration, or Scheduling Events within the Same Time Period Records in the MPI Database

Example:

4,000 confirmed duplicates within a quarter

125,000 registration/scheduling events during same time period

4,000 divided by 125,000

Creation Rate Percentage is 3.2%

Industry Goal: .5% or less

Action Step – 3
Evaluate Root Causes of Errors: Check out the Front End
The Front End

• Assess registration/scheduling procedures
• Promote standardized naming convention procedures
• Define optimal patient searching protocols
• Provide routine error reports
Other Improvement Ideas

- Review equivalent name tables
- Participate in interface testing and conversion mapping efforts
- Serve on RHIO/HIO Committees
- Consider biometrics / photographs
- Third party data sources
- Establish IG framework
Operational Checklist

Healthcare Data Management

- Establish Governance Teams (representing Privacy/Security, Compliance, Reporting, HIM/Legal Record, HIM Coding/Chart Completion, Case Mgmt, IT/Interfaces, Quality Improvement)
  - Roles / Decision-Making Processes for transparency
- Document Data Flows /Messaging Triggers
- Survey – Determine what policies exists and refine/revise

MPI Integrity

- Assess current state (total duplicates, etc.)
- Calculate Duplicate Creation Rate
- Assign resources to complete duplicate reconciliation
- Plan historical MPI clean ups prior to conversions/new systems
- Assess performance of patient matching algorithm
HIM MPI Data Integrity Operations
- Establish centralized data integrity team
- Create multidisciplinary overlay correction plan
- Assess root causes of MPI errors
- Monitor MPI errors by user/department and share trends
- Establish/communicate task priorities

Registration/Scheduling
- Create/update naming convention policies
- Define optimal patient searching procedures
- Provide MPI error reports to management
## Monitoring/Reporting Errors

<table>
<thead>
<tr>
<th>Metric</th>
<th>Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duplicate Rate</td>
<td>Quarterly</td>
</tr>
<tr>
<td>Duplicate Creation Rate</td>
<td>Quarterly</td>
</tr>
<tr>
<td>Duplicate Creation Rate by User/Area</td>
<td>Quarterly or Six Month Intervals</td>
</tr>
<tr>
<td>Overlay Creation Rate</td>
<td>Six Month Intervals</td>
</tr>
<tr>
<td>Overlay Creation Rate by User/Area</td>
<td>Six Month Intervals</td>
</tr>
<tr>
<td>EMPI Quality/Safety Issues</td>
<td>Quarterly</td>
</tr>
<tr>
<td>Possible Duplicates Reported by staff</td>
<td>Six Month Intervals</td>
</tr>
</tbody>
</table>
Thank You!

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