Prospective and Retrospective Data Modeling and Trending Strategies for ICD-10

AHIMA ICD-10 Summit
April 16-17, 2012

Session Objectives

➢ Clinical and Financial Considerations for ICD-10 Mapping
➢ Managing ICD-10 Mappings over a period of 3-4 Years
➢ Minimizing ICD-10 Transition impact on Retrospective and Longitudinal Data Analysis

Key Clinical and Financial Considerations

• Financial challenges in health care are forcing a harder look at the value of care delivery
• Health care reform and value-based purchasing models are changing the nature of healthcare payment
Why is ICD-10 Mapping a big challenge

- ICD-9 is a statistical system designed for reporting morbidity and mortality
- Lacks the structure and granularity required for clinical decision making
- Matches are imperfect in over 95% of the cases

Quantifying Financial Risk

High Risk
- All ICD-10 scenarios group to different DRGs
  - DRG: 603
  - $10,144.80

Low Risk
- All ICD-10 scenarios group to the same DRG
  - DRG: 759
  - $2,126.46

Moderate Risk
- Some ICD-10 scenarios group to different DRGs

Quantifying Operational Risk

Risk vs Code Complexity

- Low Risk
- Moderate Risk
- High Risk
- Very High Risk

- Complexities
  - 1:1 Exact
  - 1:1 Approximate
  - 1:Many Single
  - 1:Many Combination
  - No Mapping to ICD-10

Undefined Risk

- Requires further research

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Measuring Clinical Risk

<table>
<thead>
<tr>
<th>ICD-9 Diagnosis Code</th>
<th>Clinical Specialty (CMS)</th>
<th>Target ICD-10 Options</th>
<th>Additional Documentation Requirements</th>
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ICD-9 Diagnosis Code | Clinical Risk Score | Criteria | Applicability for 99649 |
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<tbody>
<tr>
<td>99649</td>
<td>Other mechanical complication of other internal orthopedic device, implant, and graft</td>
<td>Laterality Change in ICD-10</td>
<td>Yes</td>
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<td></td>
<td>New Category Assignment in ICD-10</td>
<td>No</td>
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<td>Body Part Granularity</td>
<td>Yes</td>
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<td>New Sub Category in ICD-10</td>
<td>No</td>
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<td>Encounter Type in ICD-10</td>
<td>Yes</td>
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<td></td>
<td></td>
<td>CC/MCC Change</td>
<td>No</td>
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<tr>
<td></td>
<td></td>
<td>Total Risk Score</td>
<td>High</td>
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Ensuring Mapping Success over 3-4 Years Transition

- Identify ICD-9 use points (Clinical and Financial)
- Understand the process in which it occurs (track code usage)
- Assess risks and benefits of conversion (Clinical and Financial)
- Evaluate cost/benefit of options
- Define clear workflows

Phase Specific Considerations

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<tr>
<th>CMS Implementation Phases</th>
<th>ICD-10 Solution Considerations</th>
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ICD-10 Impacts on Longitudinal Data Analysis

Longitudinal Data Analysis in HealthCare

Usage:
- To predict health care resource utilization (HCRU)
- Determine "Cost" of illness and care pathways
- Segmentation of patients and caregivers

Models:
- Prospective
- Retrospective

Prospective Model
- Cohorts followed over period of time
- Eg: Assessment of depression and disability at baseline, 18 months, and 36 months among a sample of enrollees
Longitudinal Data Analysis in Healthcare

Retrospective Model
- Analysis providing insights into trends, behaviors, or events that have already occurred

ICD-10 would impact Longitudinal Data Modeling

- Longitudinal modeling is critically dependent on consistent set of recent history
- It adjusts history for seasonality, cycles, trends to smooth out ‘noise’
- Improper forward and backward mapping would create lot of ‘noise’
- DRG, HCC, RRU (Relative resource use) would also need to be recalibrated

Ensuring smooth cross-over to ICD-10
Accurate Data Modeling is important!

Two men were examining the output of the new computer in their department. After an hour or so of analyzing the data, one of them remarked: "Do you realize it would take 400 men at least 250 years to make a mistake this big.

Crossing the ICD-9 to ICD-10 divide

Success would depend on

- Acquiring statistically significant, stratified sample of clinical notes (track high impact claims to clinical records)
- Producing quality ICD-10 Data to feed into models (would require charts’ review)
- Working collaboratively with partners using the shortest decision spans (contracts, licenses, PHI needs!)

Key Themes for ICD-10 Success

Build Right Bridges

'Fly Together' during Transition
Questions & Answers

Speaker Information

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