A Large Provider Perspective on ICD-10 End-to-End Testing

Presented at WEDI End-to-End Testing Webinar
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UW Medicine Entities

Harborview Medical Center
University of Washington Medical Center
Northwest Medical Center
Valley Medical Center
University of Washington Physicians
University of Washington Neighborhood Clinics
University of Washington School of Medicine
Airlift Northwest

Seattle Cancer Care Alliance – shared technical and clinical resources
UW Medicine – Challenges for ICD-10

- Recent alignments between entities have resulted in a lack of integration
  - Multiple EHRs
  - Remediation: Develop common testing approaches and reporting
- Insufficient test environments
  - Remediation: we have come to an agreement with the major EHRs and peer systems to create an integrated test environment, and are working with smaller peer systems to ensure they can test their own systems and interfaces successfully
- Lack of full-time testing resources
  - Remediation: work with system owners and assigned resources to clarify deliverables and timelines – make it easy on them by providing templates and lots of communication
- Multiple projects competing for the same resources at the same time
  - Remediation: communicate with other project leadership and create synergies where possible (for example, testing meaningful use and ICD-10 in the same timeframes)
- Not all systems or partners will be ready in the preferred timeframe (NOW)
  - Remediation: plan, plan, plan – prioritize scenarios, communicate expectations, monitor internal and external testing rigorously
  - Remediation: early adopter e2e testing with Aetna
Timeline

• January – December 2013
  – Planning
  – Communication with system stakeholders to set expectations
  – Develop test management tool structure
  – Capture testing requirements based on system and business requirements

• June 2013 – December 2013
  – Early adopter e2e testing with payer

• January 2013 – April 2014
  – Internal system remediation and testing

• January – October 2014
  – Internal end-to-end and user acceptance testing
  – E2e testing with clearinghouses and payers
End-to-End Testing Approaches

- Staged test phases, each subsequent phase based on successful results of previous phase
  - Internal, application specific testing
  - Internal pair testing – application sending data through an interface
  - Internal end to end testing up to the point of generating a claim or report
  - External end-to-end testing: generate a claim → submit it to clearinghouse/payer (837) → Receive remittance advice (835) → post to GL

- Reusing scenarios successfully tested in previous enterprise efforts (EHR, CPOE) and validated by clinical departments for ICD-10 impact

- Early adopter end-to-end testing with payer
  - Claims processed in I-9 will be provided to UW Medicine coding manager
  - Begin with manually re-coding claims in I-10 via a web tool in 837 format
  - Payer will adjudicate in their test system and report back
  - Clearinghouses to be added to in Q4 2013
  - When EHR is ready to produce a claim, fully automated testing will be executed

- Test management tool (HP Quality Center v11.0) will be used to:
  - Trace requirements to test scenarios
  - Capture testing activity in phases and cycles
  - Identify testing issues
  - Identify application defects needing immediate remediation that were not found in internal testing
  - Report test results

- Collaborate with industry groups to share best practices, experiences, and improve processes
External End-to-End Testing (Early Adopter)

**Round 1**  
8/13 – 12/13

**Round 2**  
12/13 – 2/14  
(Decreasing on who gets ready first – EHR or Clearinghouse)

**Round 2 or 3**  
12/13 – 2/14

**Round 4**  
4/14 – 10/14
We can’t test every clinical scenario for all our entities, so how do we choose which scenarios to test that will give our organization the highest level of confidence in our ICD-10 readiness?

- High volume procedures/conditions/claims
- Commonly occurring medical conditions including co-morbidities
- Clinical episodes with High Cost/Revenue impact both from a positive and negative revenue perspective
- Diagnosis with High complexity of business execution (i.e. multiple physicians, differing locations, and fluctuations in services {outpatient ambulatory to inpatient})
- Politically charged areas
- Potential high impact to operational support (call center)
- Areas where there exist research implications (health trends in specific populations or regions, pandemics)
- Revenue cycle management (for providers), aka high-cost/revenue impact (for payers)

In addition to creating clinical test scenarios based on episodes of care, scenarios must also be developed to verify common administrative processes like claims intake, clinical intake, provider setup, invoicing and claims payment in a consistent and uniform manner.
Contact Information

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ICD-10 End-to-End Testing

Provider Roadmap to Testing

Catherine Mesnik & Kristen Harleman
St. Joseph Health
California & Texas
Key Discussion Topics

1) Provider challenges with testing
2) Remediating applications beyond the code set
3) Key elements of a test plan
4) Approach to external testing
5) Testing risk management
St. Joseph Health (SJH) Overview

Three Distinct Regions in Southern California, Northern California & West Texas / Eastern New Mexico

Providing care in these communities:
- 14 Acute Care Hospitals
- 2 Home Health & Hospice Agencies
- Integrated Physician Groups
- One Health Plan

Employees: 24,565 (19,084 FTE’s)

Annualized Net Revenue: $4.2 billion

Total licensed beds: 3,685

Annualized discharges: 138,400

Annualized patient days: 634,200
Given the challenges and trends, a multi-faceted and highly coordinated approach is required for successful ICD-10 remediation and compliance.
1) Identified all applications that house ICD-9 codes
   - Over 100 distinct applications, including Practice Management System and third party applications
   - Software upgrades and interface modifications require validation testing
   - Prioritization necessary
   - Operational work flow impacts

2) Developed an ICD-10 test plan
   - Distributed to internal key stakeholders
   - Testing expectations and criteria clearly outlined
   - Risk Mitigation

3) Engaged external testing partners
   - Clearinghouse
   - Payer-Provider Partnerships
ICD-10 Application Impact Overview

ICD-10 Application Breakdown Example

- **Critical** = Applications that house the ICD-9/ICD-10 data elements that map to a claim (837 and UB04) or contributes to the financial resolution of an account.
- **High Risk - Non Critical** = Applications that house ICD-9/ICD-10 data elements that have revenue impact or compliance regulations.
- **Low Risk - Non Critical** = Applications that house ICD-9/ICD-10 data elements but have no revenue impact or compliance regulations.
- **No Remediation Needed** = Applications that were reviewed by the ICD-10 team and found to have no ICD-9/ICD-10 data elements in use.
## ICD-10 Application Remediation Status

<table>
<thead>
<tr>
<th>ICD-10 Remediation Status</th>
<th>ICD-10 Remediation Status Description</th>
<th>ICD-10 Remediation Status Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>0%</td>
<td>Not ICD-10 Compliant</td>
<td>Vendor responds that version is in use and is ICD-10 compliant. ICD-10 components not enabled.</td>
</tr>
<tr>
<td>10%</td>
<td>ICD-10 compliant version installed, but not configured</td>
<td></td>
</tr>
<tr>
<td>20%</td>
<td>ICD-10 compliant version installed and configured; Ready for unit test</td>
<td>Business rules, dictionaries and data elements are configured and the ICD-10 data can be stored and passed.</td>
</tr>
<tr>
<td>40%</td>
<td>Unit test complete</td>
<td>Isolate the ICD-9 and ICD-10 components within the system and validate that these attributes work correctly.</td>
</tr>
<tr>
<td>60%</td>
<td>Integration test complete</td>
<td>Includes interfaces, batch files, secure file transfers, reports.</td>
</tr>
<tr>
<td>80%</td>
<td>End-to-End test complete</td>
<td>Test scenario to walk through the entire patient lifecycle, services provided, and insurance reimbursement.</td>
</tr>
<tr>
<td>90%</td>
<td>Migration to Live plan complete</td>
<td></td>
</tr>
<tr>
<td>100%</td>
<td>Migration to Live complete</td>
<td></td>
</tr>
</tbody>
</table>
## Test Plan Example

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ICD-10 Testing Phase Definitions

**Unit Testing**
- Unit testing is defined as the individual application system test. Each application will need to be upgraded to the ICD-10 compliant version. Unit testing will occur with the vendor and it will ensure that each application is functioning appropriately for ICD-10.

**Integration Testing**
- Integration testing is defined as the testing between two or more applications and the interfaces connecting those applications. This phase works to identify the defects in the interfaces and between integrated components.

**End to End (Enterprise) Testing**
- Enterprise testing is defined as the testing performed on a complete, integrated system to verify that the required functionality is working as designed. This phase is also considered end-to-end testing. This testing validates that ICD-10 codes pass to all the critical applications and eventually to the payer.

**User Acceptance Testing (UAT)**
- The objective of UAT is to ensure that the system meets all the business needs and is functioning the way the end users require. The Business Owners will be responsible for testing their application, ensuring the system meets their needs and accepting ownership of the functioning system.
ICD-10 Testing Goals

Unit Testing Goals:
- Practice Management System produces ICD-10 compliant 837
- Dual coding functionality validated
- Clearinghouse can process ICD-10 codes
- Reimbursement / Proration Calculation confirmed
- Downstream applications tested for ICD-10 functionality

Integration Testing Goals:
- Validate interfaces between critical applications
- Practice Management System sends 837 to Clearinghouse successfully
- Clearinghouse 837 transmission to payer validated
- Data flow to downstream applications confirmed

End to End Testing Goals:
- Payers receive and process an ICD-10 837
- Payers return an 835
- 835 successfully uploaded to Practice Management System
- Validate ICD-10 codes flow to downstream applications and functionality confirmed
1) Current version of Practice Management System is not configured to meet business needs for ICD-10

2) Practice Management System is being upgraded to ICD-10 compliant version, in conjunction with enterprise standardization project

3) Unit test needs to be repeatable in each region’s system

4) Testing application utilized for tracking
   - Test script requirements
   - Outcomes
   - Defect management
   - Leadership status reporting
1) Specific test cases to test system functionality in multiple regions
   - Modeled from real patients selected using pre-defined criteria
   - Manageable volume that is repeatable
   - Natively coding test cases

2) Reuse test cases for various phases of testing, when possible

3) Test operational and financial impacts outside of applications with external trading partners to establish baselines

4) When applications and external trading partners are ready, use jointly agreed upon test cases

5) High volume test cases
   - MDCs and DRGs impacted by ICD-10
   - High volume / High revenue service lines
   - Service lines requiring additional clinical documentation
Approach to External Testing

1) Engage payers in Payer – Provider Partnerships
   - Sync testing timelines
   - Financial modeling
   - Crossmapping ICD-9 to ICD-10 for contract remediation
   - Operational impact

2) Participate in State Collaborative testing work group and WEDI State Collaborative Initiative

3) Learn lessons from HIMSS WEDI ICD-10 National Pilot Program

4) Align with Clearinghouse to be in lockstep with testing timeline
Testing Risk Management

- Produce clearly defined test scripts
- Plan adequate testing time for re-testing
- Root cause analysis
- Budget resources to fix defects
- Maintain a defect log
For further information, please contact:

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Questions?

Please use your questions box to type any questions you may have for our speakers.

Thank you for attending today’s webinar!

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