Impact of ICD 10 conversion on Quality and Performance Measurement
February 29, 2016
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DISCLAIMER: The views and opinions expressed in this presentation are those of the author and do not necessarily represent official policy or position of HIMSS.
Conflict of Interest

Mary Barton, MD, MPP
Jesse James, MD, MBA

Have no real or apparent conflicts of interest to report.
Learning Objectives

• Discuss code mapping challenges and predicted effects on certain rates from the perspective of a measure developer

• Explain how to analyze and present the early results of an ICD-10 conversion

• Discuss system/data conversion, data errors, and data loss from an implementer’s perspective
Topics

• The promise and challenge of ICD-10
• Changes to measure specifications
• Uses of ICD data for risk stratification and quality measure reporting
• What we expected to happen (preparing for the conversion to ICD-10)
• What actually happened
• Impact on population health data
• What to look for in 2016
A Measure Developer’s Perspective
The use of claims data to assess quality of care falls under the category of Treatment/Clinical – Quality of Care. The changes from ICD 9 to ICD 10 offer an opportunity for measure developers and users to examine the impact of use of the new code set on measure specifications.
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Overview

• NCQA’s conversion process and timeline
• Conversion experience
HEDIS® ICD-10 Conversion Timeline

• 3-year conversion timeline (2010-2012)
• Conversion Process was based on *ICD-10-CM/PCS Coding Maintenance Operational Guidance*, published by the National Quality Forum
  - Identify ICD-10 codes
  - HEDIS Expert Coding Panel review
  - Clinical expert review
  - Public review and comment period
  - NCQA reconciliation of conversion issues

HEDIS® is a registered trademark of the National Committee for Quality Assurance (NCQA).
HEDIS Conversion Timeline

- HEDIS 2013 contains 80 measures
- Initial conversion list has 45 HEDIS measures
- Include ICD-10 codes in HEDIS 2014
  - Revised to HEDIS 2015 after one year ICD-10 delay
- Convert 1/3 of measures each year
Implementing Best Practices

1. Convene Clinical and Coding Experts
   - HEDIS Expert Coding Panel
   - Measurement Advisory Panels

NCQA Experience
   - Formal staff training proved invaluable
   - Convert easy measures first
   - Coding experts had intuitive understanding of ICD-10-CM codes based on experience with ICD-9-CM
   - Clinical experts had questions about “appropriate use” of ICD-10-CM codes
Implementing Best Practices

2. Determine Intent

- New code set, fully consistent with intent of original measure
- Take advantage of more specific code set to form new version of measure, fully consistent with original intent
- Change the measure intent

NCQA Experience

- Must determine measure intent prior to determining conversion intent
- Determine if existing codes represent true intent, or if codes represent *best approximation of the intent*, based on codes available at the time of measure development
Implementing Best Practices

• Improvements in Code Specificity
  – Asthma diagnosis codes: ICD-10 specific to clinical severity (mild, moderate, severe persistent)
  – Diabetes type I and type II
  – Pregnancy codes specific to trimester

• Changes
  – Combination codes for conditions and common symptoms or manifestations
  – Code the underlying condition first
  – Use additional code
### Asthma measure

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>[J45.20]</td>
<td>Mild intermittent asthma, uncomplicated</td>
</tr>
<tr>
<td>[J45.21]</td>
<td>Mild intermittent asthma with (acute) exacerbation</td>
</tr>
<tr>
<td>[J45.22]</td>
<td>Mild intermittent asthma with status asthmaticus</td>
</tr>
<tr>
<td>[J45.30]</td>
<td>Mild persistent asthma, uncomplicated</td>
</tr>
<tr>
<td>[J45.31]</td>
<td>Mild persistent asthma with (acute) exacerbation</td>
</tr>
<tr>
<td>[J45.32]</td>
<td>Mild persistent asthma with status asthmaticus</td>
</tr>
<tr>
<td>[J45.40]</td>
<td>Moderate persistent asthma, uncomplicated</td>
</tr>
<tr>
<td>[J45.41]</td>
<td>Moderate persistent asthma with (acute) exacerbation</td>
</tr>
<tr>
<td>[J45.42]</td>
<td>Moderate persistent asthma with status asthmaticus</td>
</tr>
<tr>
<td>[J45.50]</td>
<td>Severe persistent asthma, uncomplicated</td>
</tr>
<tr>
<td>[J45.51]</td>
<td>Severe persistent asthma with (acute) exacerbation</td>
</tr>
<tr>
<td>[J45.52]</td>
<td>Severe persistent asthma with status asthmaticus</td>
</tr>
<tr>
<td>[J45.901]</td>
<td>Unspecified asthma with (acute) exacerbation</td>
</tr>
<tr>
<td>[J45.902]</td>
<td>Unspecified asthma with status asthmaticus</td>
</tr>
<tr>
<td>[J45.909]</td>
<td>Unspecified asthma, uncomplicated</td>
</tr>
<tr>
<td>[J45.990]</td>
<td>Exercise induced bronchospasm</td>
</tr>
<tr>
<td>[J45.991]</td>
<td>Cough variant asthma</td>
</tr>
<tr>
<td>[J45.998]</td>
<td>Other asthma</td>
</tr>
</tbody>
</table>
Implementing Best Practices

3. Use Appropriate Tools

NCQA Experience

- GEMs—use GEM as a “starting point”
- Tabular lists and indices—search for appropriate terms
- Purchased Excel spreadsheets of codes with definitions, listed at minimum specificity
- Tracking tools—build your own
Implementing Best Practices

4. Assess for Material Change

NCQA Experience

– Face validity assessed as part of conversion process
– Most measures *fully consistent with original intent*
– Have not had an opportunity to use dual-coded data sets
– Impacts assessment underway
  • Longitudinal data analysis
  • Challenges and benefits associated with measurement periods
Implementing Best Practices

5. Solicit Stakeholder Comments

NCQA Experience

- Organizations not ready to review/comment in March 2011, 2012
- Third and final review and comment period scheduled July 1–December 15, 2013
  - Allow as much time as possible
  - Delay as long as feasible
Implementing Best Practices

6. Version the Measures

NCQA Experience

- Challenges associated with measurement periods
  - HEDIS 2015 based on 2014 calendar year
  - ICD-10 will impact some HEDIS 2015 measures
    - Eligible populations for some measures based on events that occur in the year prior to the measurement year
Work Smarter or Work Harder

• Scrutinize measures and processes
  – Redundancy
  – Inconsistency
  – Inappropriateness

• Changes phased in over 3 years to reduce burden on customers

• Changed how we provide codes (HEDIS 2014 Value Set Directory)
Analysis Plan

• Face validity assessment during identification of ICD-10 codes
• Identified measures of concern
• Prospective analysis to better understand the expected level of impact
Treatment/Clinical–Quality of Care

The use of ICD 10 codes in quality metrics offers a wider array of options, and at the same time, all the preparation cannot predict quite how providers will use the new, expanded codes.
An Implementer’s Perspective
Learning Objectives

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Patient Engagement and Population Management

The transition from ICD-10 promises to improve health systems’ ability to monitor, measure, and highlight the health needs of a population. Compared with ICD-9, ICD-10 is more specific, complete, and attuned to quality measurement and risk stratification.
The integrated data platform supports population health management

**Data and Integration Services**
- Aggregates a broad clinical and financial data set from health system partners and payers
- Matches patients through a Master Patient Index
- Stores data in Patient-centric Data Warehouse

**Clinical and Business Content**
- Applies profiling, stratification, and workflow rules on a broader and deeper data set
- Runs data through a highly configurable rules platform

**Identifi Applications**
- **EXECUTIVE** Dashboard to assess and monitor key clinical, financial, and operational performance metrics
- **HEALTH PLAN** Management and workflow tools to optimize and support the breadth of key health plan operations
- **NETWORK** Full network perspective for management of provider profiles and contract relationships
- **PRACTICE** Full patient panel review and population health performance metrics
- **CARE** Identify high risk patients and perform the necessary interventions to close gaps in care
- **ANALYTICS** Customizable analytics and reporting tool
- **RULES** Create, manage, and edit clinical and business rules
- **DATA** Manage, review, and monitor all data sources
- **ADMIN** Monitor and manage system and application performance, build/edit new assessment

**Host EMR**
- DRives actionable insight into workflow via EMR

**EMR Optimization**
- Drives actionable insight into workflow via EMR

**Biometric Data**
- Hospital ADT Data
- Payer Claims
- Case Notes
- Pharmacy Data
- Lab Results
- EMR Data
- HRA Data

**Identifi Data**

**Chart Title**: The integrated data platform supports population health management

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## EMR Integration Work to Date

### Data Types

<table>
<thead>
<tr>
<th>EMR</th>
<th>ADT, Lab, Biometric, CCD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Epic</td>
<td>ADT, Lab, Biometric, CCD</td>
</tr>
<tr>
<td>Cerner</td>
<td>ADT, Lab, Biometric, CCD</td>
</tr>
<tr>
<td>eClinicalWorks</td>
<td>ADT, Lab, Biometric, CCD</td>
</tr>
<tr>
<td>Centricity</td>
<td>ADT, Lab, Biometric, CCD</td>
</tr>
<tr>
<td>Allscripts</td>
<td>Lab, Biometric, CCD</td>
</tr>
<tr>
<td>Greenway</td>
<td>Lab, Biometric, CCD</td>
</tr>
</tbody>
</table>

### Others

- NextGen
- Care360
- Amazing Charts
- Practice Fusion
- e-MDs
- athenahealth

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**Integrating Today**

- **ADT** = inpatient EMR, HL7 format
- **Lab** = LOINC encoded, HL7 format
- **Biometric** = Ambulatory, HL7 format preferred, flat file possible
- **CCD** = ambulatory data, (EMR dependent)

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**Able To But Not Integrating Today**

- **Scheduling** = ambulatory data, HL7
- **Unstructured** = progress/encounter notes (EMR dependent)
A variety of rule types drive predictive models for stratification

Cross-Condition Strategic Rules
- Care Utilization Trend
- Cost Utilization Trend
- Multiple Conditions

Predictive Model Rules
- Disease Severity
- Treatment Intensity
- Complications/Burden

Condition-Specific Rules
- Asthma
- COPD
- CAD
- CHF
- Diabetes
- Risk Grouping Rules
- Gaps in Care Rules
- Poor Outcome Rules
- Condition Discovery Rules

Preventive Rules
- Age/Gender based Screening Rules
- Immunization Rules
- Wellness Mgmt Rules

Medication Therapy Mgmt. Rules
- Rx portfolio Optimization Rules
- Rx Abuse Rules
- Rx Substitution Rules

Condition Discovery Rules

Care Utilization Trend
Cost Utilization Trend
Multiple Conditions
Disease Severity
Treatment Intensity
Complications/Burden
Risk Grouping Rules
Gaps in Care Rules
Poor Outcome Rules
Condition Discovery Rules
Age/Gender based Screening Rules
Immunization Rules
Wellness Mgmt Rules
Rx portfolio Optimization Rules
Rx Abuse Rules
Rx Substitution Rules
Clinical Code Set Maintenance & Abstraction

**Concept Types**
- Medication Type
- Problem Type
- Procedure Type
- Encounter Type
- Allergy Type
- Lab Results Type
- Vitals Type

**Concepts**
- Chronic Heart Disease
- Diabetes Mellitus
- Asthma
- COPD

**Coding Systems**
- DM ICD9-HEDIS
- DM ICD9-NQF
- DM SNOMED-HEDIS
- DM SNOMED-Best Available

**Code Lists**
- DM ICD9-HEDIS
  - 250.0
  - 250.10
  - ...
  - 250.99
NQF Measure #2372 Breast Cancer Screening: How NCQA Defines That Rule

- **Initial Patient Population** =
  - AND: "Patient characteristic: birth date" >= 41 year(s) and <= 68 year(s) starts before start of "Measurement period"
  - AND: "Patient characteristic: Gender Female"

- **Denominator** =
  - AND: "Initial Patient Population"
  - AND: "Encounter: encounter outpatient" <= 2 year(s) starts before or during "Measurement end date"
  - AND NOT:
    - AND:
      - OR: "Procedure performed: bilateral mastectomy"
      - OR:
        - AND: "Procedure performed: unilateral mastectomy CPT"
        - AND: "Procedure performed: bilateral mastectomy modifier"
      - OR:
        - AND: > 1 count(s) of
          - AND: "Procedure performed: unilateral mastectomy"
          - AND:
            - AND NOT: FIRST:"Procedure performed: unilateral mastectomy" concurrent with SECOND:"Procedure performed: unilateral mastectomy"
            - starts before or during "Measurement end date"

- **Numerator** =
  - AND: "Diagnostic study performed: breast cancer screening" <= 2 year(s) starts before or during "Measurement end date"

- **Exclusions** =
  - None
NQF Measure #2372 (Breast Cancer Screening): How Evolent Clinicians Will Build That Rule

**WHEN**

1. Initialize - Note that all criteria below must be met for the rule to fire.

2. Pt.Age.Low - Patient age is greater than or equal to 42 years

3. Pt.Age.High - Patient age is less than or equal to 69 years

4. Pt.Gender - Patient gender is Female

5. Pt.Enc.Past.Count - Patient has had a
   - Outpatient encounter
   - 1 or more times in the past
   - 2 year(s)

6. not(

7. Pt.Proc.Past - Patient has had a
   - Bilateral mastectomy

8. or

9. Pt.Proc.Past.Lat - Patient has had a
   - Mastectomy
   - with a laterality of Bilateral

10. or

11. Pt.Proc.Past.Count - Patient has had a
    - Unilateral mastectomy
    - 2 or more times in the past
    - 200 year(s)

12. )

**THEN**

1. Assert that NQF 0031 denominator criteria met
What did we expect?

- Increased granularity, clinical detail of codes
  - Etiology, anatomic site, severity, etc.
  - Combination codes (aka “pre-coordinated concepts”)
  - Beneficial to stratification and event detection
- Increased number of codes
  - Increased code length
  - Semantic division of codes from 1 to multiple concepts
- Grace period for use of less specific codes for billing

How did we prepare for the expected?

• Testing new claim file layouts and formats
• Enterprise end-to-end testing (in vitro and in vivo)
• Mapping code sets for concepts to ICD10
  – HEDIS® specifications
  – Value sets for local and custom concepts
  – CMS General Equivalence Mappings (GEMs) file
  – Review by clinical subject matter experts
• Established cross-functional team for ICD data surveillance
Relatively consistent count of Members with Diagnoses Represented by ICD-9 on 9/30/15 as by ICD-10 on 10/01/15

- Members were included who did not have issues with the structure of the claim and were loaded to production EDW successfully.
Top 10 Codes from Claims was Relatively Consistent for ICD-9 and ICD-10

<table>
<thead>
<tr>
<th>September 2015</th>
<th>October 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ICD-9</strong></td>
<td><strong>ICD-10</strong></td>
</tr>
<tr>
<td>V70.0</td>
<td>ENCOUNTER GEN ADULT MED EXAM W/O ABNORMAL FIND</td>
</tr>
<tr>
<td>V04.81</td>
<td>NEED PROPHYLACTIC VACCINATION&amp;INOCULATION FLU</td>
</tr>
<tr>
<td>V58.69</td>
<td>ENCOUNTER FOR IMMUNIZATION</td>
</tr>
<tr>
<td>V04.81</td>
<td>ENCOUNTER FOR IMMUNIZATION</td>
</tr>
<tr>
<td>401.1</td>
<td>ESSENTIAL HYPERTENSION, BENIGN</td>
</tr>
<tr>
<td>401.9</td>
<td>OTHER LONG TERM CURRENT DRUG THERAPY</td>
</tr>
<tr>
<td>272.4</td>
<td>ESSENTIAL PRIMARY HYPERTENSION</td>
</tr>
<tr>
<td>250.00</td>
<td>UNSPECIFIED ESSENTIAL HYPERTENSION</td>
</tr>
<tr>
<td>250.00</td>
<td>OTHER AND UNSPECIFIED HYPERLIPIDEMIA</td>
</tr>
<tr>
<td>244.9</td>
<td>OTHER AND UNSPECIFIED HYPERLIPIDEMIA</td>
</tr>
<tr>
<td>244.9</td>
<td>OTHER AND UNSPECIFIED HYPERLIPIDEMIA</td>
</tr>
<tr>
<td>244.9</td>
<td>OTHER AND UNSPECIFIED HYPERLIPIDEMIA</td>
</tr>
<tr>
<td>V20.2</td>
<td>ROUTINE INFANT OR CHILD HEALTH CHECK</td>
</tr>
</tbody>
</table>

Conceptual Match in ICD9 and ICD10
Prevalence of Diabetes in Claims Remained Consistent from 9/15 – 11/15

- Evolent does not have a full month of claims for December or January due to claim’s lag
- Members with diabetes are defined as people with >= 1 ICD diagnoses of diabetes in one month
Prevalence of Hypertension in Claims Remained Consistent from 9/15 – 11/15

- Evolent does not have a full month of claims for December or January due to claim’s lag
- Members with hypertension are defined as people with >= 1 ICD diagnoses of hypertension in one month
Prevalence of COPD Codes Remained Consistent from 9/15 – 11/15

- Evolent does not have a full month of claims for December or January due to claim’s lag
- Members with COPD are defined as people with >= 1 ICD diagnoses of COPD in one month
Transition on 10/1/2015 in use of ICD9 to ICD10 within ADT messages near complete
Providers Transitioning to Sending Only ICD10 Codes: 12/27/15 – 01/02/2016

- We are seeing a slower ICD9 to ICD10 shift across clients when compared to medical claims data
- Most clients are transitioning towards sending only ICD10 codes in their ADT messages
Top 10 Codes from ADT was Relatively Consistent for ICD-9 and ICD-10…but less so than claims

September 2015

<table>
<thead>
<tr>
<th>ICD9</th>
<th>Diagnosis Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>401.9</td>
<td>UNSPECIFIED ESSENTIAL HYPERTENSION</td>
</tr>
<tr>
<td>486</td>
<td>PNEUMONIA, ORGANISM UNSPECIFIED</td>
</tr>
<tr>
<td>786.50</td>
<td>CHEST PAIN UNSPECIFIED</td>
</tr>
<tr>
<td>584.9</td>
<td>ACUTE KIDNEY FAILURE UNSPECIFIED</td>
</tr>
<tr>
<td>427.31</td>
<td>ATRIAL FIBRILLATION</td>
</tr>
<tr>
<td>599.0</td>
<td>URINARY TRACT INFECTION SITE NOT SPECIFIED</td>
</tr>
<tr>
<td>786.05</td>
<td>SHORTNESS OF BREATH</td>
</tr>
<tr>
<td>428.0</td>
<td>CONGESTIVE HEART FAILURE UNSPECIFIED</td>
</tr>
<tr>
<td>786.09</td>
<td>OTHER DYSPNEA AND RESPIRATORY ABNORMALITIES</td>
</tr>
<tr>
<td>276.51</td>
<td>DEHYDRATION</td>
</tr>
</tbody>
</table>

October 2015

<table>
<thead>
<tr>
<th>ICD10</th>
<th>Diagnosis Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>I10</td>
<td>ESSENTIAL PRIMARY HYPERTENSION*</td>
</tr>
<tr>
<td>J18.9</td>
<td>PNEUMONIA UNSPECIFIED ORGANISM</td>
</tr>
<tr>
<td>R07.9</td>
<td>CHEST PAIN UNSPECIFIED *</td>
</tr>
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<td>N17.9</td>
<td>ACUTE KIDNEY FAILURE UNSPECIFIED</td>
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<td>I48.91</td>
<td>UNSPECIFIED ATRIAL FIBRILLATION</td>
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<tr>
<td>N39.0</td>
<td>URINARY TRACT INFECTION SITE NOT SPECIFIED</td>
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<td>R06.02</td>
<td>SHORTNESS OF BREATH</td>
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<tr>
<td>J44.1</td>
<td>CHRONIC OBSTRUCTIVE PULMONARY DZ W/EXACERBATION</td>
</tr>
<tr>
<td>I25.10</td>
<td>ASHD NATIVE CORONARY ARTERY W/O ANGINA PECTORIS</td>
</tr>
<tr>
<td>D64.9</td>
<td>ANEMIA UNSPECIFIED</td>
</tr>
</tbody>
</table>

Note: focused on ADT messages that trigger stratification into transitional or emergent care programs
* ADT message also from Observation service location
Are we seeing use of expanded, more-detailed codes?

• We see physicians use more granular codes for diagnosis of diabetes in October 2015
• Evolent received 28 unique ICD-9 codes for diabetes from a client’s practice in September 2015
• That same practice used 45 unique ICD10 codes in October 2015
Are we seeing use of the expanded, more detailed codes?

<table>
<thead>
<tr>
<th>ICD9</th>
<th>% of DM Codes</th>
<th>Diagnosis Description</th>
<th>ICD10</th>
<th>% of DM Codes</th>
<th>Diagnosis Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>250.00</td>
<td>62%</td>
<td>DIAB W/O COMP TYPE II/UNS NOT STATED UNCNTRL</td>
<td>E11.9</td>
<td>57%</td>
<td>TYPE 2 DM WO COMP</td>
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<tr>
<td>250.02</td>
<td>10%</td>
<td>DIAB W/O MENTION COMP TYPE II/UNS TYPE UNCNTRL</td>
<td>E11.65</td>
<td>13%</td>
<td>TYPE 2 DM W HYPERGLYCEMIA</td>
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<tr>
<td>250.60</td>
<td>5%</td>
<td>DIAB W/NEURO MANIFESTS TYPE II/UNS NOT UNCNTRL</td>
<td>E11.40</td>
<td>5%</td>
<td>TYPE 2 DM WITH DIABETIC NEUROPATHY UNSPEC</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>E11.42</td>
<td>2%</td>
<td>TYPE 2 DM W/DIAB POLYNEUROPATHY</td>
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<tr>
<td>250.40</td>
<td>3%</td>
<td>DIAB W/RENAL MANIFESTS TYPE II/UNS NOT UNCNTRL</td>
<td>E11.21</td>
<td>2%</td>
<td>TYPE 2 DM W/DIABETIC NEPHROPATHY</td>
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<td></td>
<td></td>
<td></td>
<td>E11.22</td>
<td>2%</td>
<td>TYPE 2 DM W/DIAB CHRON KIDNEY DZ</td>
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<tr>
<td>250.70</td>
<td>3%</td>
<td>DIAB W/PERIPH CIRC D/O TYPE II/UNS NOT UNCNTRL</td>
<td>E11.51</td>
<td>1%</td>
<td>TYPE 2 DM W/DIAB PERIPH ANGIOPATHY W/O GANGRENE</td>
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<td>250.80</td>
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<td>DIAB W/OTH MANIFESTS TYPE II/UNS NOT UNCNTRL</td>
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<td>1%</td>
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<td>13%</td>
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<td></td>
<td></td>
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<td>1%</td>
<td>TYPE 2 DM W/OTH SPEC COMP</td>
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<td>250.50</td>
<td>2%</td>
<td>DIAB W/OPHTH MANIFESTS TYPE II/UNS NOT UNCNTRL</td>
<td>E11.39</td>
<td>0%</td>
<td>TYPE 2 DM OTH DIAB OPHTHALM COMP</td>
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<td></td>
<td>E11.359</td>
<td>0%</td>
<td>TYPE 2 DM PROLIF DM RETINOPATHY NO MACULAR EDEMA</td>
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<td></td>
<td></td>
<td></td>
<td>E11.351</td>
<td>0%</td>
<td>TYPE 2 DM W/PROLIFERATIVE DIAB RETINOPATHY W/ME</td>
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<tr>
<td>250.01</td>
<td>3%</td>
<td>DIAB W/O COMP TYPE I [JUV] NOT STATED UNCNTRL</td>
<td>E10.9</td>
<td>2%</td>
<td>TYPE 1 DM WITHOUT COMP</td>
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<tr>
<td>250.90</td>
<td>1%</td>
<td>DIAB W/UNS COMP TYPE II/UNS NOT STATED UNCNTRL</td>
<td>E11.8</td>
<td>3%</td>
<td>TYPE 2 DM W/UNS COMP</td>
</tr>
</tbody>
</table>
Learning Objectives

• Discuss code mapping challenges and predicted effects on certain rates from the perspective of a measure developer

• Explain how to analyze and present the early results of an ICD-10 conversion

• Discuss system/data conversion, data errors, and data loss from an implementer’s perspective
Data errors in inbound data

- Invalid, mismatching, or missing code system indicator
  - ICD9 indicator with ICD10 code
  - ICD10 indicator with ICD9 code
- Claims containing a combination of ICD9 and ICD10 codes
- Mapping errors on sending side (one-to-many)
- Missing (text description only) or multiple codes within a data field
Questions

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