How ICD10 Will Change the Doctor’s World:

Clinical Documentation Improvement, SNOWMED, ICD10 and EHR
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ICD10 Steering Committee  
Clinical Documentation Improvement Committee  

Clinical framework, screen shots and slides are stolen from CMS ICD10 Medical Officer and OIT  

Dr. Dan Duvall - CMS/CM/HAPG  
Susan Richards - OIT EHR lead
Contents

- ICD-10 Basic Review
- Documentation Tensions
  - Clinical Documentation Principles
  - Technical Documentation Principles
- SNOWMED Implementation
- RPMS Conversion – Patch 13
- Using ICD-10 to Energize CDI (Clinical Doc. Improvement)
ICD-10-CM Review
What is ICD-10?

- **ICD-10**
  - International Classification of Diseases- World Health Organization (WHO)
  - Approximately 2000 diseases (families)
- **ICD-10-CM**
  - “Clinical Modification”
  - US expansion to meet US reporting needs
  - Approximately 70,000 specific codes
- **ICD-10-PCS**
  - “Procedure Coding System”
  - Inpatient (hospital) coding only
  - Replaces ICD-9-CM procedures; *CPT/HCPCS are unaffected*
Why ICD10?

- Physicians asked for it!
- Specialty Society detail
- Clinical Improvement – Safety and Quality
- High Resolution v. Low Resolution Clinical Detail
Adapted from Ustun at www.who.int
<table>
<thead>
<tr>
<th>ICD-9 CM Diagnosis Codes</th>
<th>ICD-10 CM Diagnosis Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>3- 5 characters in length</td>
<td>3-7 characters in length</td>
</tr>
<tr>
<td>14,315 codes</td>
<td>69,099</td>
</tr>
<tr>
<td>First digit alpha or numeric</td>
<td>Digit 1 is alpha</td>
</tr>
<tr>
<td>Digits 2 – 5 numeric</td>
<td>Digit 2 is numeric</td>
</tr>
<tr>
<td></td>
<td>Digits 3 – 7 are alpha or numeric</td>
</tr>
<tr>
<td>Limited space for new codes</td>
<td>Flexibility for adding new codes</td>
</tr>
<tr>
<td>Lack detail</td>
<td>Very specific</td>
</tr>
<tr>
<td>Lacks laterality</td>
<td>Includes laterality</td>
</tr>
</tbody>
</table>
### Recurring Concepts

<table>
<thead>
<tr>
<th>Concept</th>
<th>#Number of Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Encounter</td>
<td>13,932</td>
</tr>
<tr>
<td>Subsequent Encounter</td>
<td>21,389</td>
</tr>
<tr>
<td>Sequela</td>
<td>11,974</td>
</tr>
<tr>
<td>Right</td>
<td>12,704</td>
</tr>
<tr>
<td>Left</td>
<td>12,393</td>
</tr>
<tr>
<td>Routine Healing</td>
<td>2,913</td>
</tr>
<tr>
<td>Delayed Healing</td>
<td>2,913</td>
</tr>
<tr>
<td>Nonunion</td>
<td>2,895</td>
</tr>
<tr>
<td>Malunion</td>
<td>2,595</td>
</tr>
<tr>
<td>Assault</td>
<td>1096</td>
</tr>
<tr>
<td>Self-harm</td>
<td>1057</td>
</tr>
<tr>
<td>Accidental</td>
<td>1262</td>
</tr>
</tbody>
</table>
## Changes by Clinical Area

<table>
<thead>
<tr>
<th>Clinical Area</th>
<th>ICD-9</th>
<th>ICD-10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fracture</td>
<td>747</td>
<td>17099</td>
</tr>
<tr>
<td>Toxins/poisons</td>
<td>244</td>
<td>4662</td>
</tr>
<tr>
<td>Pregnancy</td>
<td>1104</td>
<td>2155</td>
</tr>
<tr>
<td>Brain Injury</td>
<td>292</td>
<td>574</td>
</tr>
<tr>
<td>Diabetes</td>
<td>69</td>
<td>239</td>
</tr>
<tr>
<td>Migraine</td>
<td>40</td>
<td>44</td>
</tr>
<tr>
<td>Bleeding DO</td>
<td>26</td>
<td>29</td>
</tr>
<tr>
<td>Mood DO</td>
<td>78</td>
<td>71</td>
</tr>
<tr>
<td>HTN</td>
<td>33</td>
<td>14</td>
</tr>
<tr>
<td>ESRD</td>
<td>11</td>
<td>5</td>
</tr>
<tr>
<td>Resp Failure</td>
<td>7</td>
<td>4</td>
</tr>
</tbody>
</table>
Diagnosis Code Example

- ICD-10 Codes Provide Greater Specificity in Some Cases
  - ICD-9 code - Striking against or struck accidentally in sports without subsequent fall (E917.0)
  - 24 ICD-10-CM Detail Codes

- W21.00 Struck by hit or thrown ball, unspecified type
- W21.01 Struck by football
- W21.02 Struck by soccer ball
- W21.03 Struck by baseball
- W21.04 Struck by golf ball
- W21.05 Struck by basketball
- W21.06 Struck by volleyball
- W21.07 Struck by softball
- W21.09 Struck by other hit or thrown ball
- W21.31 Struck by shoe cleats
- Stepped on by shoe cleats
- W21.32 Struck by skate blades
- Skated over by skate blades
- W21.39 Struck by other sports foot wear
- W21.4 Striking against diving board
- W21.11 Struck by baseball bat
- W21.12 Struck by tennis racquet
- W21.13 Struck by golf club
- W21.19 Struck by other bat, racquet or club
- W21.210 Struck by ice hockey stick
- W21.211 Struck by field hockey stick
- W21.220 Struck by ice hockey puck
- W21.221 Struck by field hockey puck
- W21.81 Striking against or struck by football helmet
- W21.89 Striking against or struck by other sports equipment
- W21.9 Striking against or struck by unspecified sports equipment
Clinical Documentation
Purpose of Clinical Documentation

- Paint a Picture
- Understand a Trend
- Explain a Plan
- *Case Centered and Physician Centered*
Purpose of Coding

- Aggregation
- Decomposition
- *Data (Population) Centered and Machine Centered*
Principles for Clinical Documentation

Inclusive – Not too little
Uncluttered – Not too much
Ordered – A place for everything
Prioritized – Important jumps out
Insightful – Thought into value
Expedient – No time spent on non-value work
Inclusive/Uncluttered

- Anything you might need later for the clinical care of the patient should be in the note
  - Not enough is the problem of handwritten notes
- Anything you won’t need later for the clinical care of the patient is just clutter that makes it hard to find the gems
  - Too much is the problem of Electronic Records
- Low value is a problem in both systems
Ordered/Prioritized

- **Why** is the patient here?

  **Chief Complaint**

  - **What** do you think is going on and what did you do? **Assessment and treatment**

  - **Where** are you going from here? **Plan**

  - **How** did you reach that conclusion?

  **Pertinent History**  **Symptoms and Signs**

  - **Who** did I just treat? **Demographics and record keeping**

  - **When** am I going to get paid? **Documenting for reimbursement and legal defense**
Clinical Value

- Value added - SOAP
  - Pertinent history, physical, assessment and plan
- Business necessary
  - Demographics, coding
  - System or staff
- Non value added (clinically)
  - Automate from triggers, auto import
  - Ensure relevance with stated goal for visit
    Do automated – added checklists/negatives demonstrate compliance with necessity?
Clinical Documentation and ICD-10-CM

- In the discussion of Clinical Documentation, coding only appears as business necessary
- Coding is NOT assigning a diagnosis, although coding systems can help consistency
- ICD-10-CM granularity (detail) exceeds current documentation practices
- ICD-9-CM granularity (detail) exceeds current documentation practices
- Expected Solution: Code what is available (NOS)
- Code Dx in SNOWMED – map to ICD
Physician Impact

- Physicians deal with diagnoses not codes
- Should you learn new ICD-10 codes??
  - How many ICD-9 codes do you know by heart?
  - A dozen? None?
- Can you learn how to use an index?
  - Index is still alphabetical
- ***Create a new job aid or superbill!
  - Pick lists!
Introduction to SNOMED CT®
What is SNOMED CT®?

- Systematized Nomenclature of Medicine Clinical Terms® (SNOMED CT®)
- A comprehensive multilingual clinical healthcare terminology
- Enables the computer to understand medical language and act on it
- Extremely large set of concepts and descriptions representing many standard terminologies
Standardized Terminologies Integrated within SNOMED CT®

SNOMED CT®

ICD-9 and ICD-10 (UK)

CPT

LOINC

NOC

Omaha System

PNDS

CCC

NANDA

NIC

ICNP

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Mappings

- Relevant maps for current IHS projects:
  - SNOMED CT® to ICD-9
  - SNOMED CT® to ICD-10
  - ICD-9 to SNOMED CT® reverse map
  - SNOMED to CPT
Concept: The concept is a unit of meaning which is given a unique numeric string which is computer readable
- e.g. 823660015 represents Common Cold (disorder)

Description: This concept may have many descriptions that are humanly readable
- Common cold (disorder) – fully specified name which is unique
- Common cold – preferred term
- Acute coryza – synonym
- Acute infective rhinitis – synonym
- Cold – synonym
- Head cold – synonym
- And so on…
SNOMED CT® Reduces Ambiguity

This is particularly important for health information exchange but also extremely important for improved documentation, communication between members of the health delivery team, decision support, clinical quality measures and research.
<table>
<thead>
<tr>
<th>Condition</th>
<th>ICD-9-CM</th>
<th>ICD-10-CM</th>
<th>SNOMED CT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asperger’s disorder</td>
<td>299.8 Other specified pervasive developmental disorders</td>
<td>F84.5 Asperger’s disorder</td>
<td>23560001 Asperger’s disorder</td>
</tr>
<tr>
<td>Apert syndrome</td>
<td>755.55 Acrocephalosyndactyly</td>
<td>Q87.0 Congenital malformation syndromes predominantly affecting facial appearance</td>
<td>205258009 Apert syndrome</td>
</tr>
<tr>
<td>Metabolic acidosis</td>
<td>276.2 Acidosis</td>
<td>E87.2 Acidosis</td>
<td>59455009 Metabolic acidosis</td>
</tr>
<tr>
<td>Respiratory acidosis</td>
<td>276.2 Acidosis</td>
<td>E87.2 Acidosis</td>
<td>12326000 Respiratory acidosis</td>
</tr>
<tr>
<td>Lactic acidosis</td>
<td>276.2 Acidosis</td>
<td>E87.2 Acidosis</td>
<td>91273001 Lactic acidosis</td>
</tr>
</tbody>
</table>
SNOMED CT® implementation in RPMS
# Mapping/Storage of Data

<table>
<thead>
<tr>
<th>RPMS/EHR data</th>
<th>Stores additional data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurements</td>
<td>LOINC and/or SNOMED</td>
</tr>
<tr>
<td>Health Factors</td>
<td>LOINC and/or SNOMED</td>
</tr>
<tr>
<td>Exams</td>
<td>SNOMED</td>
</tr>
<tr>
<td>Immunizations</td>
<td>SNOMED</td>
</tr>
<tr>
<td>Infant feeding</td>
<td>SNOMED</td>
</tr>
<tr>
<td>Education</td>
<td>SNOMED</td>
</tr>
<tr>
<td>Reasons not done (refusals)</td>
<td>SNOMED</td>
</tr>
<tr>
<td>Type of referral (RCIS, Consults)</td>
<td>SNOMED</td>
</tr>
</tbody>
</table>
Mapping/Storage of Data

<table>
<thead>
<tr>
<th>RPMS/EHR data</th>
<th>Stores additional data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labs</td>
<td>LOINC</td>
</tr>
<tr>
<td>Radiology</td>
<td>LOINC and/or SNOMED</td>
</tr>
<tr>
<td>AMI data</td>
<td>SNOMED</td>
</tr>
<tr>
<td>Stroke data</td>
<td>SNOMED</td>
</tr>
<tr>
<td>Medications</td>
<td>RxNorm</td>
</tr>
<tr>
<td>Allergy ingredients</td>
<td>RxNorm and/or UNII</td>
</tr>
<tr>
<td>Allergy reactions</td>
<td>SNOMED</td>
</tr>
<tr>
<td>Medication reconciliation</td>
<td>SNOMED</td>
</tr>
</tbody>
</table>
Integrated Problem List
Why the Change?

Stage 2 meaningful use

- SNOMED CT® for problem list
- Care planning
- Clinical Quality Measures

Stabilize the user interface in advance of ICD-10 changes to reduce impact on clinical users

Improve clinical documentation of problems and encounter diagnoses

Support interdisciplinary problem focused documentation
Integrated Problem List

- Non redundant SNOMED based
- Automatic mappings to ICD 9 and ICD 10
  - Coders will refine as needed
  - If not mapped, will default to .9999
- **Selection of POV from IPL**
- Care planning documentation
- Patient Ed documentation
- Reverse mapping tool to assist in transition
IPL New Features

- Used for ALL problems addressed for patients – chronic, episodic, sub-acute
- Used by ALL clinicians who document care for patient
- Clinician uses only SNOMED CT® to document diagnoses/problems/indications
- Additional optional field of “Provider Text” will allow clinicians to add clarification
## Problem Statuses

<table>
<thead>
<tr>
<th>Current</th>
<th>Migrate to</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Active</strong></td>
<td><strong>Chronic</strong></td>
<td><strong>Diabetes, Hypertension, Asthma</strong></td>
</tr>
<tr>
<td>Sub-acute</td>
<td></td>
<td>Breast mass, ankle injury – something you are working up or needs shorter term follow up</td>
</tr>
<tr>
<td><strong>Episodic</strong></td>
<td></td>
<td><strong>Cold, Female UTI – disposition straightforward “follow up PRN or if not improving”</strong></td>
</tr>
<tr>
<td>Social /Environmental</td>
<td></td>
<td>Homeless, lack of running water, alcoholic in home</td>
</tr>
<tr>
<td><strong>Personal History</strong></td>
<td><strong>Inactive</strong></td>
<td><strong>Inactive problem of Chicken Pox</strong></td>
</tr>
<tr>
<td><strong>Inactive</strong></td>
<td><strong>Inactive</strong></td>
<td></td>
</tr>
</tbody>
</table>

Nationally vetted and released Pick Lists
Clinical Indications for orders selected from Problem List
Care planning done from Problem List
<table>
<thead>
<tr>
<th>Status</th>
<th>Onset Date</th>
<th>Provider Narrative</th>
<th>Comments</th>
<th>PHx</th>
<th>PIP</th>
<th>IP</th>
<th>ICD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chronic</td>
<td></td>
<td>*FLAT FEET</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>734</td>
</tr>
<tr>
<td>Chronic</td>
<td>08/16/2005</td>
<td>*Abnormal EKG</td>
<td>Pediatric cardiologist suggest repeat EKG 2 yrs and fax to them for reading. normal ekg with Asheville Cards 8/07: extreme right axis deviation, incomplete RBBB; ? RVH: Refer to cards if palpitations, feels faint, near syncope:</td>
<td>794.31</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chronic</td>
<td>07/06/2005</td>
<td>*Exercise induced asthma</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>9999</td>
</tr>
<tr>
<td>Chronic</td>
<td></td>
<td>*Seborrhea occipital scalp</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>690.11</td>
</tr>
</tbody>
</table>

Note the leading * which identifies the problems that require conversion to SNOMED

This was renamed from "notes"

Mappings to ICD, will map to .9999 if there is not an exact match OR less granular mapping to ICD. Mapping from National Library of Medicine
Add/Edit Problem

SNOMED CT and status are the only user entered required fields to add a problem.

- Default status from search is “episodic”.
- Add prompts for SNOMED which is required for New problem
- Edit prompts for SNOMED if problem is ICD encoded

If you are editing a problem that has not been updated to SNOMED, you will see the existing Provider Narrative and ICD9.

You may then click “Get SCT” to retrieve the reverse mapped SNOMED terms (ICD9 to SNOMED) OR you may search for a new term OR from a picklist to update.
Add/Edit Problem

Only SNOMED Term and Status are required fields.

These are optional fields that may be used to add information.

Care planning is only editable if selected as POV.

Integrated Problem Maintenance - Edit Problem

- Problem ID
- DB-2
- Priority
- Pregnancy Related
- Use as POV

- SNOMED CT: Osteoarthritis of knee
- Status: Chronic, Sub-acute, Episodic, Social/Environmental, Inactive, Personal Hx

- Required Field
- Provider Text: bilateral

- Qualifiers
  - Severity: ....
  - Clinical Course: ....
  - Finding Site: ....

- Date of Onset: 10/06/2006

- Comments
  - # Narrative: Date Author

- Care Plan Info
  - Goal Notes: Plan of Care Visit Instructions Care Planning Activities
  - Add Visit Instruction / Care Plans / Goal Activities
  - Delete Care Plan

- Care Planning Activities
  - Treatment/Regimen/Follow Up
  - Education Provided
Add/Edit Problem

Optional, encounter related

Care planning now editable
Care Planning

All optional.
- Most visits will have Visit Instructions only.
- Goals and Care Plan is usually set at diagnosis and then updated periodically.
- All fields may be populated using Tiu Templates (note icon on right of each cell).
- You may re-use previous entry and edit.
- Treatment/Regimen/Follow up will be a picklist of items.
- Items entered here will pull into encounter notes via TIU object.
Selecting several POV’s

- You may click on several Problems then click “POV” and bring up a quick documentation screen.
- You may document education on several problems, add episodicity, care planning, and follow up if desired.
SNOMED CT® search tools
If you select the FSN, it will store the Preferred term.
Clicking “+” allows user to view synonyms from which to choose.
SCT Search by synonym

Displays by synonym and both the fully specified name and “is a” relationship
Data migration tools
“Get SCT” – reverse mapping tool

- Allows for quick conversion from ICD9 encoded problem to SNOMED
  - IPL
  - Family History conditions
“Get SCT” – Problem List

- Highlight problem and click “Get SCT”

<table>
<thead>
<tr>
<th>Status</th>
<th>Date</th>
<th>Provider Narrative</th>
<th>Comments</th>
<th>PHx</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chronic</td>
<td>04/10/2007</td>
<td>Hemorrhoids</td>
<td></td>
<td>456.5</td>
</tr>
<tr>
<td>Chronic</td>
<td>04/10/2007</td>
<td>Restless legs</td>
<td></td>
<td>333.94</td>
</tr>
<tr>
<td>Chronic</td>
<td>04/11/2007</td>
<td>*Chronic Obstructive Pulmonary Disease</td>
<td></td>
<td>456.6</td>
</tr>
<tr>
<td>Chronic</td>
<td>10/22/2007</td>
<td>Essential hypertension</td>
<td></td>
<td>401.9</td>
</tr>
<tr>
<td>Chronic</td>
<td>10/22/2007</td>
<td>*ABDOMINAL PAIN</td>
<td>10/30/07 ABD U/S SHOWS CHRONIC CHOLECYSTITIS</td>
<td>789.09</td>
</tr>
<tr>
<td>Chronic</td>
<td>10/22/2007</td>
<td>*CONSTIPATION</td>
<td></td>
<td>564.09</td>
</tr>
<tr>
<td>Chronic</td>
<td>10/25/2007</td>
<td>Electrocardiogram abnormal</td>
<td></td>
<td>794.31</td>
</tr>
<tr>
<td>Chronic</td>
<td>10/29/2007</td>
<td>*HYPERLIPIDEMIA</td>
<td></td>
<td>272.2</td>
</tr>
<tr>
<td>Chronic</td>
<td>10/29/2007</td>
<td>*POST HERPETIC NEURALGIA</td>
<td></td>
<td>553.19</td>
</tr>
</tbody>
</table>
Return of “Get SCT”

Returns ICD9 to SNOMED matches. Also return the parent (less granular) and children (more granular) of the matches from which clinicians can choose. This does not work for uncoded diagnoses.
Pick lists

- Will deliver nationally vetted pick lists
- Functionality is minimal in this release. More management functionality and improving displays will come in future patch
ICD-10 Initiatives to Improve Clinical Documentation – Excuse for CDI
Manual Processes to Improve Documentation and Coding

- Accurate coding is a 2 step process
  - **Diagnosis:** The MD converts clinical information into a diagnosis, documenting the process
  - **Encoding:** Coder extracts info to categorize

- **Case Feedback**
  - **Ask the Doc:** Unclear, Incomplete, Ambiguous

- **Targeted Documentation Improvement** - Board recertification clinical improvement requirements and MU2 CQM
  - Select a clinical condition with inadequate documentation
  - Tie key elements (e.g. renal status) to increased coding detail
Technical Processes to Improve Coding - Future

- Passive automation
  - Pick Lists
  - Code look-ups and Drop-downs

- Active automation
  - Computerized questions
    - Was it R or L?
  - Clinical algorithms with code capture
Technical Processes to Improve Documentation – Decision Support

- **Algorithm** drives EHR
- Finding of diabetes triggers clinical and coding questions
- Clinical information populates fields while coding information is processed.

**Example**
- Diabetes is entered
- Last creatinine is requested
- High Cr triggers MD alert and query to confirm renal status
Data Analysis: Evidence Based Improvement

- What is the **OUTCOME** you are trying to improve with improved clinical documentation?
  - Reimbursement?
  - Ease of coding?
  - Clear handoff?
  - Clinical pathways?
  - Clinical outcomes?
Conclusion
Conclusion

- Best Documentation Practices under ICD-10 are the same as best practices under ICD-9
  - ICD-10 does not drive Clinical Documentation Improvement
  - ICD-10 benefits depend on Clinical Documentation Improvement
  - ICD-10 can be used as a tool to promote improved documentation and as a tool to facilitate improvement projects

- SNOMED does not drive and does depend on improved documentation, and has future potential to facilitate improvement projects
Recommendations

- Use CDI to grow coders into coding and documentation Quality Assurance roles
  - Collaborative Chart Review-Trigger and Review Tools
  - Feedback promotes improvement
- Use ICD-10 and SNOWMED to push software development (EMR/EHR) into clinically useful paths
  - EMR algorithms should direct clinical guidelines
- Use targeted initiatives to push documentation for improved outcomes in specific diseases and encounters
Thank You!

- Questions
- Comments
- Rumors
- Follow-up
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  - Phoenix Area Quality Management
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  - 602-364-5164