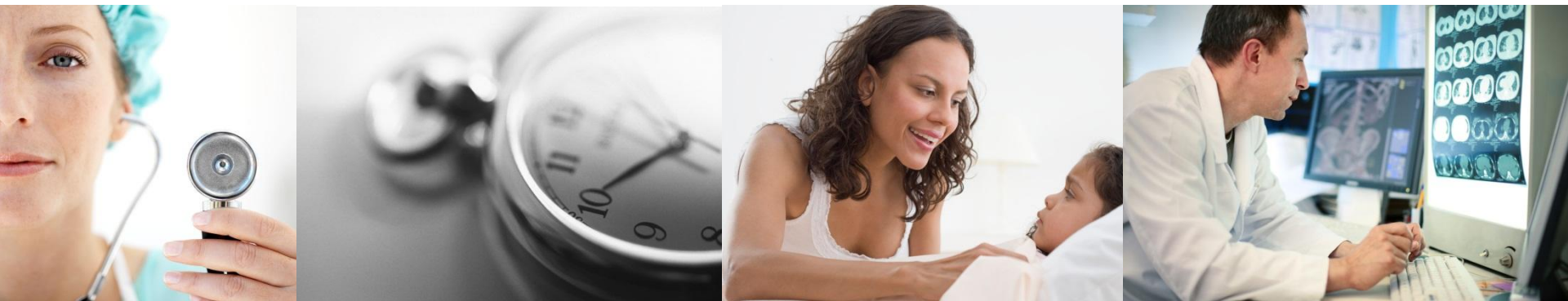


# Working Together: SNOMED CT and ICD-11-MMS

Kathy Giannangelo, October 20, 2017



# Objectives

- To describe the SNOMED CT and International Classification of Diseases Eleventh Revision for Mortality and Morbidity Statistics (ICD-11-MMS) projects being done by SNOMED International and in collaboration with the World Health Organization (WHO).

# SNOMED International and WHO - Collaboration Principles



- Commitment to linkages between SNOMED CT and WHO Classifications for the benefit of Member States, Member Countries and other stakeholder groups
- Working together in development of sustainable solutions
- Focused on solutions which are practical and implementable, and cost-effective
- Openness and transparency between the two organisations and the key stakeholders

# SNOMED International and WHO - Collaboration Principles

- Sharing of knowledge and skills where there is benefit to the content, quality and processes underpinning each organisations products and services
- Annual joint work plans agreed and resourced appropriately by both organisations
- A clear governance structure providing timely and appropriate guidance and oversight of all relevant activities

# SNOMED International/WHO Related Activities

- Establishing new governance arrangement with changes of leadership at WHO
- Maintaining and updating maps SNOMED CT to ICD-10 2016 (International)
- SNOMED CT content alignment as relevant and maps to ICD-O
- SNOMED CT content alignment with ICD-11 Mortality and Morbidity Statistics ICD-11-MMS – April 2017 field trial frozen version content
- Developing map to ICD-11-MMS (2018) – pilot phase SNOMED CT initial translation set in scope of ICD-11

# ICD-11 and SNOMED CT Content Alignment

- Objectives
  - Identify equivalence between ICD-11 and SNOMED CT
  - Identify gaps (missing SNOMED CT content, to be added)
  - Prepare background for evaluating semantic/mapping issues
  - Original plan for common ontology on hold, equivalence match currently constrained to contents of April 2017 frozen ICD-11-MMS
- Phases
  - SNOMED International review
  - External review
  - Feedback to WHO
  - Additions/changes to SNOMED CT

# Methodology

- MySQL database
  - To generate table of equivalence
  - Includes modeling for new content
  - Hosted by SNOMED International shared access
  - Referential QA rules > 100 currently
  - Bulk export to SNOMED CT editing environment - new content
- Information sources
  - ICD-11 Beta browser
  - SNOMED International browsers
  - Online - including
    - Medscape
    - OMIM
    - Orphanet
      - Liaison with separate SNOMED International project

# Internal Review

- Internal
  - Weekly online meetings with SNOMED International authoring & mapping team
  - Referrals to SNOMED International advisory groups where appropriate
  - Issues/principles log maintained
  - Multiple chapter ICD-11 rubrics
    - Reviewed internally for conflict resolution
  - SNOMED International authoring team
    - New content submitted to authoring tool for review & subsequent promotion
  - SNOMED International mapping team
- External
  - Domain experts from multiple countries
  - WHO for clarifications



# SNOMED CT to ICD-11-MMS Equivalence Table

- ICD-11 Foundation Id & MMS code to SNOMED CT identifier & terms
- One-to-one & One-to-many
- Starting point for map in opposite direction
- Potential to expand using SNOMED CT hierarchy
- Match types
  - Lexical, Concept, Partial, Out of scope etc.
- Reason for omissions & decisions
- Test data & documentation available December 2017 after final upload of new SNOMED CT content for January 2018 release
- Will require revision when final stable ICD-11-MMS is available

# SNOMED CT to ICD-11-MMS Map

- Based on April frozen version of ICD-11-MMS
- Two-phase strategy for development
  - Pilot
    - Creation of maps for the initial translation sets (<http://www.snomed.org/news-articles/snomed-ct-starter-set-translation-rfp>)
  - Second phase
    - Map the remaining in scope SNOMED CT concepts

# Methodology

- Develop position statement
- Establish team
  - SNOMED International mapping team
  - Volunteers from Member countries
    - Canada (2), The Netherlands (2), Ireland, USA
  - Contractor
- Training
- Materials
- Algorithm resources
- Tooling

# Materials

- SNOMED International
  - Mapping Tool
  - Map Training Materials
  - Mapping Personnel Handbook
  - Quality Assurance Plan and Process
- WHO
  - ICD-11 Coding Tool
  - ICD-11-MMS Browser
  - ICD-11-MMS Reference Guide
  - ICD-11-MMS Field Testing Training Manual

# Algorithm Resources

- Resources used to produce a candidate map
  - Alignment established between SNOMED CT and ICD-11
  - SNOMED International's SNOMED CT to ICD-10 map
  - WHO's ICD-11 to ICD-10 and ICD-10 to ICD-11 maps

# Algorithm Example

HIGH: (9.05) 1442752937 5A41.2 : Secondary hyperparathyroidism

Candidates: (1.004348207142857) 9633776/morbidity/unspecified 5A41.Z : Hyperparathyroidism, unspecified

(0.6695654714285714) 9633776/morbidity/other 5A41.Y : Other specified hyperparathyroidism

RULE1: 1 matches

N (5.0) 1442752937 5A41.2 : Secondary hyperparathyroidism

RULE2: 1 matches

Equivalent (2.0) 1442752937 5A41.2 : Secondary hyperparathyroidism

RULE3: 3 matches

MATCH O/S (0.6695654714285714) 9633776/morbidity/unspecified 5A41.Z :  
Hyperparathyroidism, unspecified

EXACT PT (2.05) 1442752937 5A41.2 : Secondary hyperparathyroidism

MATCH O/S (0.6695654714285714) 9633776/morbidity/other 5A41.Y : Other specified  
hyperparathyroidism

RULE4: 1 matches

1 PARENTS (1.0) 9633776/morbidity/unspecified 5A41.Z : Hyperparathyroidism, unspecified

FINAL CATEGORY HIGH

# Results

- Map directed from the source SNOMED CT concept to the target ICD-11-MMS
  - Including Type 1 extension codes
  - Clustering
    - Using guidance as published in the Reference Guide

## Contusion of ear (disorder), 50228009

### Map Entries

1/1 2110065613 NA00.8 : Superficial injury of ear  
TRUE



POSSIBLE REQUIREMENT FOR AN EXTERNAL CAUSE CODE AND EXTENSION CODE(S)



MAP SOURCE CONCEPT IS PROPERLY CLASSIFIED

2/1 2040998541 XJ2040998541 : Contusion  
TRUE



MAP SOURCE CONCEPT IS PROPERLY CLASSIFIED

# Next Steps for SNOMED CT to ICD-11- MMS Map



- Complete and evaluate the results of the Pilot
  - Adjust
    - Algorithms
    - Documentation
    - QA plan and process
  - Recommend long term plan to complete the map
- Establish approach to mapping the remaining in scope SNOMED CT concepts



# Working Together

- ICD-11 alignment project
  - Addition of clinical content to SNOMED CT
  - Association established between SNOMED CT and ICD-11 created equivalence where possible between the SNOMED CT and ICD-11-MMS further enabling mapping
- SNOMED CT to ICD-11-MMS map

# Benefits for Stakeholders

- Better data while reducing data capture and reporting costs
- Improved accuracy of clinical and administrative data by standardization
- Re-use of clinical data for other purposes including billing, statistical, epidemiology, research
- Exchange of standard information in health information systems
- Efficient submission and response to national reporting requirements
- Increased quality of products via feedback from linkage development and usage
- By working together, offer solutions that decrease costs for members states/countries