Transitioning from an Mapping Project to a Mapping Service
Contents of session

- Overview of the Phase 1 SNOMED CT to ICD-10 MAP
  - Transitioning from a Project to a Service
Project History

- Mapping Special interest group MapSIG initiated the project in 2007
- Planned in phases
  - Phase one is mapping 9800 SNOMED CT concepts
  - Phase two is mapping remaining concepts
Key Project Steps

- Establish Use Case!
- Scope
- Develop Mapping heuristics and methodology
- Tooling
- Priority set
- Legacy maps
- Identify required roles for mapping process
- Education plan and training materials
- Quality assurance and validation
Foundation Development of the MAP 1/2

- MapSIG discussions and workplan
- Definition of use case
- Identification of priority set
- Methodology and exercises
- Tooling
- Workflow
Foundation Development of the MAP 2/2

- Quality Assurance
- Content validation
- Consensus management
- Development of:
  - person specifications
  - education guidance
  - training materials
  - tooling guidance
Use Case – Morbidity NOT Mortality

Physicians record clinically relevant information about a patient during their hospital stay, using SNOMED CT.

Software employs the knowledge based algorithm of sequential machine readable MAP Rules to identify the most appropriate target code(s) based on the rules and conventions of ICD-10.

An ICD-10 coding professional reviews and edits the same coded record to meet submission requirements for statistical morbidity recording.
Milestones

- Three different international mapping exercises carried out by volunteers of the MapSIG (2009 – 2010)
- Collaborative Agreement between WHO and IHTSDO (2010)
- Training of donated mapping staff in Toronto (October 2010)
- Joint Advisory Group meets for first time (October 2010)
- Mapping began in November 2010 and took five months to complete first 1000 MAPS
Milestones

- Pause and review after first 500 MAPS concluded that the original mapping process could not facilitate a reproducible map
- Process was adjusted and mapping continued – changed process would result in output of over 19,000 concepts mapped
- Training of employed as well as donated map specialists (March 2011)
- Technology preview of first 6000 MAPS released (August 2011)
Other work

- Peer review built into process
- Technical QA
- Content validation exercise developed and organized by Joint Advisory Group using external agency (AHIMA)
- Consensus management panel met twice and agreed resolutions for 29 discordant maps (December 2011 and January 2012)
Deliverables

- 19,000 plus concepts mapped to ICD-10 released as a technology preview
- Stand-alone mapping tool
- User guidance for mapping tool
- Technical specification for mapping
- Education guidance
- Training materials
- Release notes
- Content validation report
## Example of results

<table>
<thead>
<tr>
<th>id</th>
<th>sctName</th>
<th>id sctName</th>
<th>mapGroup</th>
<th>mapPriority</th>
<th>mapRule</th>
<th>mapAdvice</th>
<th>mapTarget</th>
<th>icdName</th>
<th>mapCategoryValue</th>
</tr>
</thead>
<tbody>
<tr>
<td>217a9bea</td>
<td>Chronic pharyngitis (disorder)</td>
<td>1</td>
<td>1</td>
<td>IFA 90979004</td>
<td>Chron IF CHRONIC TONSIL</td>
<td>J35.0</td>
<td>Chronic tonsillitis</td>
<td>Map of source concept is context dependent</td>
<td></td>
</tr>
<tr>
<td>69703317</td>
<td>Chronic pharyngitis (disorder)</td>
<td>1</td>
<td>2</td>
<td>IFA 232406009</td>
<td>Chronic PHARY</td>
<td>B37.8</td>
<td>Candidiasis of other sites</td>
<td>Map of source concept is context dependent</td>
<td></td>
</tr>
<tr>
<td>174a7931</td>
<td>Chronic pharyngitis (disorder)</td>
<td>1</td>
<td>3</td>
<td>OTHERWISE TRUE</td>
<td></td>
<td></td>
<td>Chronic pharyngitis</td>
<td>Map source concept is properly classified</td>
<td></td>
</tr>
<tr>
<td>02dc8b54</td>
<td>Severe manic bipolar I disorder without psychotic features</td>
<td>1</td>
<td>1</td>
<td>TRUE</td>
<td></td>
<td></td>
<td>Bipolar affective</td>
<td>Map source concept is properly classified</td>
<td></td>
</tr>
<tr>
<td>4586ab94</td>
<td>Hemorrhagic bronchopneumonia (disorder)</td>
<td>1</td>
<td>1</td>
<td>TRUE</td>
<td></td>
<td></td>
<td>Bronchopneumonia</td>
<td>Map source concept is properly classified</td>
<td></td>
</tr>
<tr>
<td>545ccdec</td>
<td>Autoimmune pancytopenia (disorder)</td>
<td>1</td>
<td>1</td>
<td>TRUE</td>
<td></td>
<td></td>
<td>Other specified</td>
<td>Map source concept is properly classified</td>
<td></td>
</tr>
<tr>
<td>1319fd71</td>
<td>Congenital syphilitic hepatomegaly (disorder)</td>
<td>1</td>
<td>1</td>
<td>TRUE</td>
<td></td>
<td></td>
<td>Other symptom</td>
<td>Map source concept is properly classified</td>
<td></td>
</tr>
</tbody>
</table>
Transitioning from a Project to a Service
Requirements for a Mapping Service

- Establish business case
- Receive approval and funding
- Obtain resources
  - Staff
  - Tooling
  - Data
Milestones

- December 2011
  - GA approval
- January 2012
  - Planning meeting
- March – May 2012
  - Recruit, interview and hire mapping staff
- May 2012
  - Face-to-face training
Milestones

- **June – July 2012**
  - Staff on-board

- **June – September 2012**
  - Continue staff training
  - Update tools
  - Obtain member/affiliate feedback on next set of priorities to map

- **October 2012**
  - Begin map maintenance
Framework

- Work plan
  - Quality assurance
  - Risk management

- Validation plan
  - Content
  - Usage
Framework

- Feedback mechanism
  - Content request
  - Help desk
- Training plan
  - Minimum one face-to-face meeting per year
  - Proposed accreditation
Mapping Service interdependencies

- SNOMED content development
- Map target systems
- Tooling development
  - Transition to an integrated tooling solution
- Member and Affiliate forum feedback
Requirements advised via Member Forum

- Map prioritisations
- Training needs
  - Week of 20 May 2013 hosted by the UKTC/IHTSDO
    - Early planning underway
      - Location: UK
      - Length of training: Four and a half days
Meet the Mapping Service team

Kathy Giannangelo, Map Lead

Donna Morgan, Map Lead/Map Specialist

Nicki Ingram, Map Specialist

Krista Lilly, Map Specialist
Goals

- Update all training materials and stand-alone mapping tool
- Build on the existing skills base to provide a ‘core’ team of map specialist individuals who are kept at a level of skills, including volunteers and actual map specialists in Member countries
- Update Phase 1 SNOMED CT to ICD 10 maps based on the latest releases of SNOMED CT and ICD 10
- Publish the updated version of the maps in 2013
Goals

- Map new additions to SNOMED CT as they are added to the International Release
- Outline a process for collating and reviewing priority lists of requirements for mapping
- Undertake mapping of priority sets
- Create and maintain maps from SNOMED CT to other classifications and terminologies, e.g., ICPC2
Challenges

- Prioritise 110,000 in a way that country requirements are met
  - e.g., all clinical findings and events in relation to the care of individual with diabetes

- Transitioning from a stand-alone mapping and workflow tools to an integrated tooling solution to support mapping activity in the international workbench

- Resources to perform usage validation
Example

- A patient is seen by a clinician for a number of problems. An EHR module for clinical documentation is using a set of SNOMED CT terms to record the items listed on a problem list. The clinician performs a search for a term that represents the patient’s problem, selects the appropriate term, and saves that term to the patient’s problem list, where it is displayed. The problems are encoded with SNOMED CT IDs.

  - Essential hypertension (59621000)
  - Hemarthrosis of knee (202413005)
  - Cystocele (252005008)
Example continued

- Once the clinician has completed the problem list, the mapping application is applied. The results for the SNOMED CT concepts recorded are:

<table>
<thead>
<tr>
<th>SNOMED CT ID</th>
<th>Essential hypertension (disorder)</th>
<th>1</th>
<th>1</th>
<th>PC</th>
<th>TRUE</th>
<th>ALWAYS I10</th>
<th>DESCENDANTS NOT EXHAUSTIVELY MAPPED</th>
<th>I10</th>
<th>Essential (primary) hypertension</th>
</tr>
</thead>
<tbody>
<tr>
<td>59621000</td>
<td>Essential hypertension (disorder)</td>
<td>1</td>
<td>1</td>
<td>PC</td>
<td>TRUE</td>
<td>ALWAYS I10</td>
<td>DESCENDANTS NOT EXHAUSTIVELY MAPPED</td>
<td>I10</td>
<td>Essential (primary) hypertension</td>
</tr>
</tbody>
</table>

- SNOMED CT ID for Essential hypertension (59621000) has a one-to-one map to ICD-10 code I10 and is properly classified (PC). This map requires no human review.
SNOMED CT ID for Hemarthrosis of knee (202413005) has a one-to-many map and is context dependent (CD). The coding specialist reviews the record where no trauma is documented. The ICD-10 map assigned is M25.06.
Example continued

<table>
<thead>
<tr>
<th>SNOMED CT ID</th>
<th>Description</th>
<th>(Menu)</th>
<th>(IHTSDO)</th>
<th>CD</th>
<th>Other specified disorders of bladder</th>
</tr>
</thead>
<tbody>
<tr>
<td>252005008</td>
<td>Cystocele (disorder)</td>
<td>Male (finding)</td>
<td>CD</td>
<td>N81.1</td>
<td>Cystocele</td>
</tr>
<tr>
<td>252005008</td>
<td>Cystocele (disorder)</td>
<td>Female (finding)</td>
<td>CD</td>
<td>N81.1</td>
<td>Cystocele</td>
</tr>
<tr>
<td>252005008</td>
<td>Cystocele (disorder)</td>
<td>OTHERWISE TRUE DESCENDANTS NOT EXHAUSTIVELY MAPPED</td>
<td>NC</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SNOMED CT ID for Cystocele (252005008) has a one-to-many map and is context dependent (CD). The EHR module captures the patient’s sex as female. The ICD-10 map that is automatically assigned is N81.1.
QUESTIONS?