Lessons from SNOMED CT Studies by the UVic Health Terminology Group

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Overview of Timeline and Studies

Summary of Selected Studies

SNOMED CT Encoding Methodology

SNOMED CT Versioning

Lessons and Opportunities
Overview of Timeline and Studies

1. Implications of SCT Adoption on Secondary Uses of Data in Canada, 2006
2. Reverse mapping of ICD-10-CA to SCT, 2007
3. Initial experience in mapping MDS home care to SCT, 2008
4. A methodology for encoding problem lists as SCT in general practice, 2008
5. Exploratory reverse mapping of ICD-10-CA to SCT, 2008
6. An exploratory review of UK SCT to ICD10 cross map, 2009
7. An exploratory study to examine the use of SCT in palliative care, 2010
8. A method for encoding clinical datasets in SCT, 2010
10. ICD-10-CA to SCT Reverse Mapping, 2010
11. SCT Quality Assurance Report 1.0, 2010
12. Implications of SCT Versioning, 2010

Content
Mapping
Methods/Tools
Implementation
Summary of Selected Studies

- Implications of SCT on secondary use
- Mapping/Encoding MDS-HC to SCT
- SCT encoding methodology

Implications of SCT on Secondary Use

- Internal report for CIHI, 2006
- Limited SCT/mapping experience, business case
- Complex, context specific, validation, few tools
- Coordination, facilitation, communication efforts
- Implementation decisions affect secondary use
- Jurisdictions – limited experience, 5yrs, ICD9/10
- NHS: SCT team ~20+ members, UK: 20+ experts and 100 knowledgeable individuals
Mapping/Encoding MDS-HC to SCT

- International Resident Assessment Instrument (InterRAI) Network with 12+ instruments
- Minimum Data Set for Home Care (MDS-HC)
- Health condition/need screening, care planning, quality and outcome indicators
- 21 sections, 89 assessment items, 198 sub-items, 396 responses

Mapping/Encoding MDS-HC to SCT

<table>
<thead>
<tr>
<th>MDS/Home Care Canadian Version</th>
<th>SECTION B. COGNITIVE PATTERNS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section AA - Name and Identification Information</td>
<td>MEMORY RECALLABILITY</td>
</tr>
<tr>
<td>Section BB - Personal Items</td>
<td>(Code for recall of what was learned or known)</td>
</tr>
<tr>
<td>Section CC - Referral Items</td>
<td>0. Memory OK  1. Memory problem</td>
</tr>
<tr>
<td>Section A - Assessment Information</td>
<td>a. Memory OK - seems/approaches to recall after 5 minutes</td>
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<tr>
<td>Section B - Cognitive Patterns</td>
<td>b. Procedural memory OK - can perform all or almost all items in a multitask sequence without cues for initiation</td>
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<tr>
<td>Section C - Communication/Motor patterns</td>
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<td>Section D - Vision Patterns</td>
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<td>Section E - Mood and Behaviour Patterns</td>
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<td>Section F - Social Functioning</td>
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<td>Section G - Inpatient Support Services</td>
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<td>Section H - Physical Functioning</td>
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<td>Section I - Course in Last 7 Days</td>
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<td>Section J - Diagnoses</td>
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<tr>
<td>Section K - Health Condition and Preventive Health Measures</td>
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<td>Section L - Nutrition/Maturation Status</td>
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<td>Section M - Dental Status</td>
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<td>Section N - Skin Condition</td>
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<td>Section O - Environmental Assessment</td>
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<td>Section P - Service Utilization</td>
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<td>Section Q - Medications</td>
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<tr>
<td>Section R - Assessment Information</td>
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</tbody>
</table>

SECTION B. COGNITIVE PATTERNS

1. MEMORY RECALLABILITY
   a. Short-term memory OK - seems/approaches to recall after 5 minutes
   b. Procedural memory OK - can perform all or almost all items in a multitask sequence without cues for initiation

2. COGNITIVE SKILLS FOR DAILY DECISION-MAKING
   a. How well client makes decisions about organizing the day (e.g. when to get up or have meals, which clothes to wear or activities to do)
      0. MODERATELY impaired-Decisions consistently poor or unsafe
      1. MODERATELY impaired-Decisions consistently poor or unsafe, cues/supervision required at all times
      2. MODERATELY impaired-Decisions moderately impaired, cues/supervision required at all times
      3. MODERATELY impaired-Decisions moderately impaired, cues/supervision required at some times
      4. SEVERELY impaired-Decisions never made decisions
   b. Worsening of decision making as compared to status of 90 DAYS AGO or since last assessment
      0. No 1. Yes
SCT Encoding Methodology, Steps

Step 1: Inputs

[Images of data and interface terminology with tables and codes]
Step 2: Data Cleaning

Step 3: Encoding
Step 4: Outputs

SNOMED CT Versioning

- Pre-coordinated Concept Available
- Fully-specified Name
- Preferred Term
- Concept and Description Status
- IsPrimitive
- Defining Attributes
- Long Normal Form
- Hierarchy
- Supertypes
- Subtypes
- Concept Model
SNOMED CT Versioning Implications

- Inactive concepts
- Descriptions
- Concept model and post-coordination
- Patient case queries

Lessons and Opportunities

- Experimentation – content, mapping, tools, front/back-end implementation, others?
- Strategy, infrastructure, expertise, policy
- Linking clinical value, health system use
- Opportunity to review data dictionary, work/information flows, strategy, policy
- Opportunity to leverage existing systems, e.g. MDS, clinical documents, EMR
References

1. Lau F. Implications of SNOMED CT adoption on secondary uses of data in Canada – An overview report. For the Canadian Institute for Health Information, Sep 2006.