A pragmatic approach to facilitate co-existence of concept systems using SNOMED CT as reference terminology

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SNOMED CT Implementation Showcase 2014, Amsterdam
SCOPE OF PROJECT

- Standardization to support consistent and structured recording of health data at municipal level
- Core information in home care should be registered using standard classifications and terminologies

98 municipalities in Denmark (Local Government Denmark)
SCOPE OF PROJECT

Municipality

ICF

ICD-10, NCSP

ICPC

HOSPITAL
SNOMED CT as Reference terminology

Activities of daily living?

Pain conditions?

Findings related to nutrition?

A simple and pragmatic approach to reach this objective ??

ICF

ICD-10

ICD-10, NCSP

ICPC

SNOMED CT

ICF

ICD-10
Objective

• What degree of integration between coding systems is necessary?  
  \textit{Full vs. partial map}

• What technical implementation facilitates co-existence?  
  \textit{Introducing the mapping stem}
“As a common global reference terminology, SNOMED CT limits the need for development of “everything to everything” maps between multiple different code systems. “

[IHTSDO, starter guide]
SNOMED CT as REFERENCE TERMINOLOGY

SNOMED CT

ICF, ICPC, ICD
(or other coding system)

Full map vs. Partial map
FULL MAP
SNOMED CT as REFERENCE TERMINOLOGY

SNOMED CT

ICF, ICPC, ICD (or other coding system)
FULL MAP
SNOMED CT as REFERENCE TERMINOLOGY

SNOMED CT ...
... or local codes
PARTIAL MAP
SNOMED CT as REFERENCE TERMINOLOGY

SNOMED CT

ICF (or other coding system)
PARTIAL MAP
SNOMED CT as REFERENCE TERMINOLOGY

SNOMED CT

ICF (or other coding system)

Gradual refinement

276435006 | Pain/sensation finding |

29857009 | Chest pain (finding) |

B28011 Pain in chest

B280 Sensory of pain
The use of mapping stem in Reference Sets

<table>
<thead>
<tr>
<th>id</th>
<th>refsetId</th>
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<td>Chest pain</td>
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</table>
Mapping stem

• The mapping stem is not intended for
  – A translation between concepts from different concept systems
  – Full semantic map between concepts
Mapping stem

- Assumptions to partial map-usage
  - Awareness about retrieval needs and requirements
  - High-level groups of interest
  - Never a post-coordinated expression
PARTIAL MAP - pitfalls in usage

SNOMED CT

Search retrieves B28011

Search does not retrieve B28011

B280 Sensory of pain

B28011 Pain in chest

29857009 | Chest pain (finding)|

276435006 | Pain/sensation finding|
Mapping stem and post-coordination

Ulcer (disorder) 429040005

Malignant neoplastic disease (disorder)
363346000

Diabetes mellitus (disorder)
73211009

Hypertension (disorder)
38341003

Associated with

Associated with

Associated with
Mapping stem and post-coordination

And as expressions...

Consistent representation of expressions that represent the same type of information
i.e. same level of granularity of mapping stem

<table>
<thead>
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<th>Concept 2</th>
<th>Relation</th>
<th>Concept 3</th>
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The use of mapping stem in Reference Sets

- Enable post-coordinated expressions to be represented in Reference Sets

<table>
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<th>expression</th>
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Retrieve all types of Ulcer (overall concept groups)
The use of mapping stem in Reference Sets

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Use expressions to explore the different types of Ulcer.
Conclusion

**Full map**
- Best foundation for utilizing SNOMED CT
  - Retrieval and analytics
- Resource-heavy
  - Mapping
  - Time
  - Maintenance

**Partial map**
- Simple retrieval and analytics
- Resource saving
- Pragmatic starting point
  - Incremental development towards full map is possible
Thank you for your attention.....