SNOMED CT implementation: Implications of choosing Clinical findings or Observable entities

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Project departure

4 hospitals on 11 sites

One common EHR-system

Vision:
• Data is **specific** and **complete**.
• Data is **accessible**.
• Data is **structured**, so they are easier for others to **understand and reuse**.
• Data can automatically be **extracted** for reporting to national registries, etc..

SNOMED CT

References: www.rn.dk/Regionen/English/Health+Care.htm
Sufficient concept selection?
### Sufficient concept selection?

<table>
<thead>
<tr>
<th>Observable entity</th>
<th>Clinical finding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain / sensation observable</td>
<td>Pain / sensation finding</td>
</tr>
<tr>
<td>Cognitive function feature</td>
<td>Cognitive function finding</td>
</tr>
<tr>
<td>Value belief pattern</td>
<td>Value belief finding</td>
</tr>
<tr>
<td>General physical observable</td>
<td>General physical finding</td>
</tr>
<tr>
<td>Head and neck region observable</td>
<td>Finding of head and neck region</td>
</tr>
<tr>
<td>Eye/vision observable</td>
<td>Eye / vision finding</td>
</tr>
<tr>
<td>General characteristics of abdomen</td>
<td>General finding of abdomen</td>
</tr>
</tbody>
</table>

...representing a question or procedure which can produce an answer or a result.

...represent the result of a clinical observation, assessment or judgment.

#### Eye/vision observable:

- Normal vision finding
- Abnormal vision finding

References: www.ihtsdo.org
Objective

- Exact concept semantics?
- Facilitate data retrieval

Physical examination

- Eye/Vision: 
  .... ..... ..... 

- Oral Cavity: 
  .... ..... ..... 

- Ear: 
  .... ..... ..... 

- Nose: 
  .... ..... ..... 

- Neck: 
  .... ..... .....
Method

Clinical expressions

Nursing status
Physical examination

Clinical findings
- Content coverage
- Level of granularity
- Concept definition

Observable entities
- Content coverage
- Level of granularity
- Concept definition

Comparison

Content coverage
Level of granularity
Concept definition
Method

Content coverage

Is the clinical expressions represented in each of the hierarchies? (either as pre-coordinated concept or as post-coordinated expression)

Level of granularity

Concept definition
Method

Content coverage

Level of granularity

Concept definition
Method

Distinguish the concept from related concepts by the mean of the concept definition.
### Result

<table>
<thead>
<tr>
<th></th>
<th>Clinical findings</th>
<th>Observable entities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content coverage</td>
<td>100 %</td>
<td>94 %</td>
</tr>
<tr>
<td>Level of granularity</td>
<td>av. 6.33</td>
<td>av. 5.25</td>
</tr>
<tr>
<td>Fully defined concepts</td>
<td>56 %</td>
<td>0 %</td>
</tr>
</tbody>
</table>
Implications

• Applying Clinical findings instead of Observable entities will have implications for the use of data with respect to:
  – Coverage of clinical expressions
  – Possibilities for data-retrieval based on
    • Hierarchical composition
    • Defining characteristics
Discussion

Ambiguous use of SNOMED CT can be an issue

Guidelines for consistent use of SNOMED CT is essential for facilitating reusability of data

For all times there will be place for terminological improvement

SNOMED CT implementation should be approached with respect to the content and structure SNOMED CT has today