Lessons learned from starting to implement SNOMED CT

Project SNOMED Klurig
County Council of Östergötland, Sweden

Presenter: Tua Holm
SNOMED CT Implementation Showcase • October 30, 2014
Context: Health care in Sweden (in brief)

Provided by
- 20 county councils/ regional councils (landsting/regioner)
  - Health care centers
  - Hospitals
- Private providers
  - 290 municipalities (kommuner)
    - Care for the elderly and disabled
    - School health care

Regulated and supported by
The National Board of Health and Welfare (Socialstyrelsen)
- Government agency with duties within social services, health and medical services, and more
- Resources related to eHealth strategy
- National Release Center of SNOMED CT
- ...

Followed up through
National quality registers (nationella kvalitetsregister)
- Collect data from providers
- Receive public funding
Context: Pilot projects

The National Board of Health and Welfare (Socialstyrelsen)

- Funded pilot projects during 2013
- Aim: experience from implementation of resources related to eHealth strategy

National information structure

Interdisciplinary terminology

SNOMED Klurig
SNOMED Klurig: Project participants

Klurig means clever!

County council + 13 municipalities in Östergötland
Promote eHealth development

County councils in Östergötland + Jönköping + Kalmar
Collaborate on highly specialized medical care

County Council of Östergötland

Linköping University
Medical Informatics research group
SNOMED Klurig: Application areas

County council + 13 municipalities in Östergötland

Application area:
transfer of discharge summaries from hospital care to municipal care

County councils in Östergötland + Jönköping + Kalmar

Application area:
transfer of data from EHR system to national quality register

County Council of Östergötland

Spin off:
dialog with EHR vendor on future SNOMED CT implementation
SNOMED Klurig: Project objectives

Look into how SNOMED CT may be used by

the information producer
• to specify what one’s EHR content means

the information consumer
• to identify what information is received and
• specify what information is requested
Discharge summary: Mapping

• Mapping source
  – Discharge summary EHR template
    • Fixed headings
    • Free-text fields
    • Instructions about intended content

• Mapping process
  – Determine intended concept for each heading
  – Search for appropriate SNOMED CT concept
  – Note code, questions, and comments in spreadsheet

• Results
  – Spreadsheet
  – Lessons learned

Application area: transfer of discharge summaries from hospital care to municipal care
Application area: transfer of discharge summaries from hospital care to municipal care

<table>
<thead>
<tr>
<th>Mapping source + comments</th>
<th>Mapping + comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>11 out of 32 rows</td>
<td></td>
</tr>
</tbody>
</table>
Discharge summary: Idea

SNOMED CT concept codes:
106048009 | respiratory finding (finding) |
267038008 | edema (finding) |

Application area: transfer of discharge summaries from hospital care to municipal care

Info producer: County Council of Östergötland

Info consumers: Municipalitites of Östergötland
Quality register: Mapping

• Mapping source
  – Quality register questionnaire
    • Fixed-value sets
    • Instructions about intended content

• Mapping process
  – Same as for previous application area
  – But also considering:
    • Requirements of clinical situation
    • EHR system information model

• Results
  – Spreadsheet
  – Lessons learned

Application area:
transfer of data from EHR system to national quality register
## Quality register: Spreadsheet

**Mapping source**
For info held otherwise in the EHR system: note on how/where

**For info requested by quality register:**
- Mapping + comments

**For info relevant to document in EHR template:**
- Draft template

**Application area:**
Transfer of data from EHR system to national quality register

<table>
<thead>
<tr>
<th>Application area:</th>
<th>Transfer of data from EHR system to national quality register</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>For info held otherwise in the EHR system: note on how/where</th>
<th>Mapping source</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>For info requested by quality register:</th>
<th>Mapping source</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>For info relevant to document in EHR template:</th>
<th>Mapping source</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>15 out of 124 rows</th>
</tr>
</thead>
</table>
Quality register: Idea

Application area: transfer of data from EHR system to national quality register

Info producers:
County councils of Östergötland, Jönköping, Kalmar

SNOMED CT concept codes:
- 387371005 | dipyridamole (substance) |
- 309966001 | stroke unit (environment) |
- 405795006 | time of symptom onset (observable entity) |

Specify content
Specify
Identify request

Info consumer:
The Swedish Stroke Register
Lessons learned

• Implementing mappings in EHR systems will be most beneficial …
  – if systems can ”do something” with the mappings
  – if systems allow mapping of various objects and objects in context
  – if systems can handle mapping versions
  – if systems can separate reference terminology from end user interface terminology
Lessons learned

• Implementing mappings in EHR systems will be most beneficial ...
  – when contents are (highly) structured or structurable
  – if the mapping source is unambiguous
  – if ways of input, end users and ways of working follow
Lessons learned

• Implementing mappings in EHR systems will be most beneficial ...
  – if management and development is adequately resourced (including clinical expertise)
  – if SNOMED CT keeps on developing, e.g. with Swedish synonyms
Lessons learned

- SNOMED CT may be beneficial irrespective of implementation in EHR systems ...
  - as a tool for revising existing templates, headings, and fixed-value sets
  - as a basis for developing new templates etc.
  - as a common point of reference when contents and templates are shared
  - as a basis for setting up requirements for EHR systems that support structured content

Spin off: dialog with EHR vendor on future SNOMED CT implementation
Lessons learned

• Successful mapping …
  – calls for clinical expertise
  – requires adequately trained mapping personnel

• Training …
  – benefits from integrating theoretical instruction and practical use of SNOMED CT
  – benefits from being spread out over some period of time
Thank you for your attention!

- Question time!
- Feel free to contact me at Tua.Holm@lio.se