SNOMED CT in the Netherlands

Implementation & application of SNOMED CT

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Standards...
My 20 years of terminology

- DICE — Diagnoses for Intensive Care Evaluation
  - Development of terminology for NICE
  - Quality assurance of terminology
  - User interfaces for data entry
My 20 years of terminology

- SNOMED CT
  - No more development of terminology!
  - Quality assurance of terminology
  - User interfaces for data entry
What did & do we want?

- Make it **easy** for healthcare professionals to capture data in **clinical** detail, structured & standardized, for multiple reuse.
Disclaimer / conflicts (?) of interest

• 2007-2015 Consultant for Nictiz, Dutch release center for SNOMED CT
• 2007-2015 Member of SNOMED quality assurance / technical committee
• 2008-2011 Chair of SNOMED Implementation SIG
• 2015-2017 Member of SNOMED modeling advisory group
• 2007-2017 Dutch (NEN) rep for CEN & ISO on terminology & classification
2007 – The Netherlands joins IHTSDO (now SNOMED International)

• Capacity building
  – Introductory courses
  – Conferences

• Initial experiences
  – Pilot projects
2010 – Interface terminologies

• Initiative to develop thesauri
  – “Diagnoses thesaurus” (released in 2015)
  – “Procedures thesaurus” (commenced in 2011; beta-release June 2017)
• Interface terminologies to SNOMED CT, links to ICD, LOINC, DBC (Dutch DRG), procedure codes
2014 – Policy and capacity building

• Vision on documentation of care
  – Patient-oriented, continuous care
    • problem-oriented recording in an integrated patient record
  – Documentation of care is part of the care process and fits the *workflow* of care providers
    • Guided by clinical requirements, not financial
  – Capture once, use many
  – International standards
Strategy

1. Increase quality and usefulness of healthcare information
2. Optimize care processes
3. Demonstrate improved outcomes of care
Aims for 2020

• 80% of chronically ill has direct access to medication info, vital functions and test results, available for mobile apps or internet applications.

• 75% of chronically ill and vulnerable elderly can perform self tests, remotely monitored by care provider

• Home care & support is supplemented by 24/7 telecare
Capacity building

- E-learning for all care professionals
  - 4 to 6 modules, totaling approx. 1 hour
- User survey – point-of-care data capture
- Generic data for patient transfer
- Nursing data for patient transfer
- Head-neck tumors, care process and indicators
- Problem-oriented Medical Record
E-learning / raising awareness

https://youtu.be/9xgzPsp6OSo
**Involvement of patients and health professionals**

- **“MedMij”**
  - Standards for personal health environments

- **“Acceleration program”** Information exchange between patient and professional
  - Implementation of patient portals
Capacity building among care professionals

- Master program in Health Informatics
  - 4-year part-time; modular; e-learning
  - 10 courses + final assignment
  - Courses include: point-of-care data capture; e-health; decision support; big data in healthcare
To be done

• Make it **easy** for healthcare professionals to **capture data** in **clinical detail**

• Create demand for using SNOMED CT, adopt it in national standards (e.g., quality indicators; reimbursement)
Answers to earlier questions
Costs

*Types of costs to be considered*
- National licensing costs
- Costs for mappings, interface terminologies / translations, subsets, etc.
- Costs for updating Health IT systems

*Which stakeholders will bear the costs*
- IT vendors, healthcare organizations, government

*Costs for a translation*
- Up to 70 man-year (Denmark), in practice much less
Costs

Number of employees at the Terminology Authority (Nictiz)?

• On terminology: 4 FTE
• Collaboration with Belgium
• Much work done by Dutch Hospital Data (4 FTE)
Standardisation

Which international standards or use cases require the use of SNOMED CT, in particular in the Netherlands?

• Exchange of patient information / continuity of care
Standardisation

In which way is SNOMED CT integrated in these standards (OID, tools like ART DECOR)?

• Largely through specification
  – Healthcare Information Building blocks
  – Core dataset for healthcare
Implementation

What are challenges to face during usage, specification, and implementation?

• Explain, Explain, Explain
• There is no one-size-fits-all solution
• User interfaces should be more powerful
• Derivatives require maintenance
Implementation

*Which mistakes should be avoided?*

- ALL mistakes…!
  - Start as soon as possible
  - Build an organizational infrastructure
  - Make it “pay” for care professionals to participate and to change their registration habits: define use cases
  - Motivate instead of mandate
  - Keep an eye out on data quality
Implementation

What does SNOMED offer regarding e-learning?

• Quite a lot!
  – https://elearning.ihtsdotools.org/
  – SNOMED CT Foundation Course
  – SNOMED CT Implementation Course
  – Content Development Theory Course
  – And more
How is SNOMED CT extended with new codes? Is it possible to participate in the international development?

- Various methods: international, national, institutional extensions
- Contribution to international release is possible (depends on use case)
Benefit

*How do health care, research, and public health benefit from SNOMED CT?*

- Currently, not yet
- Ultimately:
  - Better decision support
  - Continuity of care
  - Lower burden for quality assessment
  - Sharing data for research
  - Learning healthcare system
Where is SNOMED CT needed: CDA, interfaces, data analysis (big data)?

• Interfaces need to link with SNOMED CT

• Data analysis benefits from SNOMED CT hierarchical and attribute relationships
Benefit

Technical application: text recognition, reference terminology, value sets, …

• Currently, mainly interface terminologies
• Need for text recognition, more advanced data capture, etc.
Benefit

*Medical use: knowledge management system, safety of medical treatment, well-structured documentation, DRGs, …*

- All in the pipeline, nothing in place so far
Further questions?

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