

SNOMED CT in the Netherlands

Implementation & application of SNOMED CT

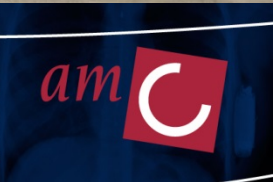
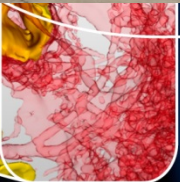
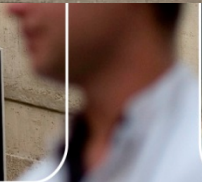
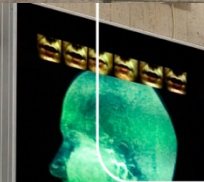
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Standards...



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



1997



2007



2017



My 20 years of terminology



- SNOMED CT
 - **No more development** of terminology!
 - **Quality assurance** of terminology
 - **User interfaces** for data entry



1997



2007



2017



What did & do we want?

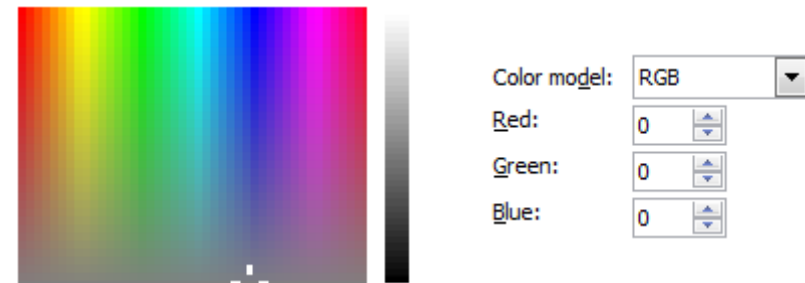
- Make it **easy** for healthcare professionals to **capture data in clinical detail, structured & standardized, for multiple reuse**

Classification

red
yellow
blue



SNOMED CT



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



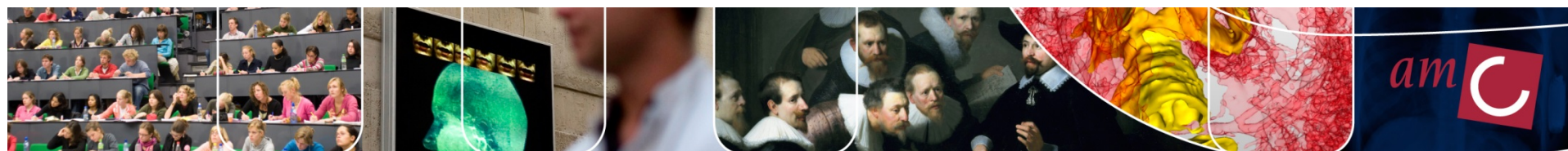
- 80% of chronically ill has direct access to medication info, vital functions and test results, available for mobile apps or internet applications.
- 75% of chronically ill and vulnerable elderly can perform self tests, remotely monitored by care provider
- Home care & support is supplemented by 24/7 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



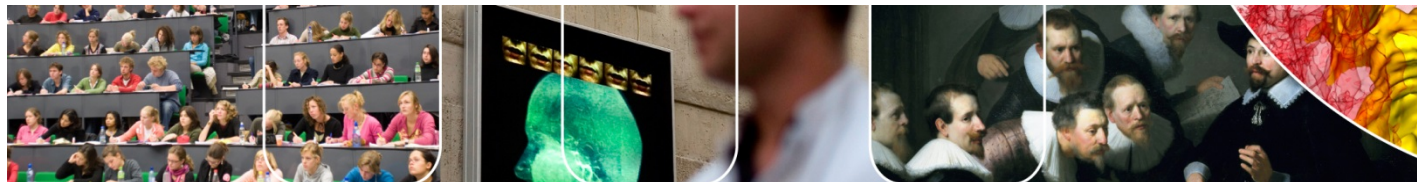
Involvement of patients and health professionals

- “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



Implementation

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



Benefit

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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