DCM projects

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Content

- Projects in international perspective
- HL7 projects
- ISO 13972 quality criteria and methodology for DCM
IMH

- > 3000 models
- > XML based
- > use in EHR, Data warehouse, DSS
- > etc.
VA

- Heavy investment in UML modeling
- Creation of Devices DAM HL7
HL7 int & Nictiz: Top 10 DCM

- Body height and weight
- Respiration, heart rate, body temperature, blood pressure
- Apgar Score
- Glasgow Coma Score
- Barthel Index
- Braden Scale
- 2006 discussions in HL7 v3,
- 2007 decision to use for DCM
DCM in Netherlands 2-10-2010

- Nictiz 26 DCM for e-diabetes.
- Top 10 DCM HL7 international, ballot sept 2010.
- For archetype development 13 assessment scales in DCM and as archetype
- Parelsnoer initiative: DCM as core for data specs biobanking.
- Nictiz: repository DCM national level
- Results 4 Care: nursing process
- UMCN, Portavita and UMCG: EHR based on DCM principle
- VWS: Care standards and DCM for chronic diseases
Korea Clinical Contents Models

- Development of CCM
- Implementation of clinical document template library based on CCM
- Interconnection of CDS system with Structured Data Entry (SDE)
  - All reflect current medical information standards such as standards medical terminologies, UCUM and HL7 V3 data type as much as possible.
CCM projects

- Field application
- Feedback
HL7 DEV project DCM

- DCM for medical devices (DAM in sept 2010 ballot)
- People from ISO, HL7, care and industry are involved
ISO 13972 status 02-10-2010

- Development of DCM well received internationally, lot of interest, but even more debate and discussion.
- Within ISO and HL7 3 projects.
- 320 PC DCM instances
- HL7 Dev
- ISO, project team from different countries and SDO’s.
- ISO per 28 July 2009 a definitive IS route, only 1 counter vote (Au), may Rio: discussed Working Draft 1, follow-up in October 2010, Rotterdam: move to CD hopefully
Semantic interoperability problem

- **Originating System**: Administrative principle
  - Diagnosis = metastatic bowel cancer
  - Meaning:
    - Secondary malignant cancer of the lung (metastasised from bowel)

- **Second System**
  - Problem List:
    - Bowel cancer - metastatic
  - Assumed meaning:
    - Secondary malignant cancer of bowel metastasised from other unspecified location

The diagram illustrates the information exchange between two systems, highlighting the semantic interoperability problem where the meaning of 'metastatic' changes from one system to another.
Definition of DCM

- A detailed clinical model is a relatively small, standalone information model designed to express a clinical concept in a standardized and reusable manner. It documents clinical information as a discrete set of precise clinical knowledge for that concept.

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ISO 13972 scope

- Clearly define how detailed clinical model should look and how it should be designed, its utility and relationships to the EHR and EHR system.
- Describe quality requirements and methodologies that are necessary for clinician’s involvement in design of detailed clinical models and their endorsement of instances.
- Clinician’s would need to analyze the quality of the clinical content, content description, data element specification, and potential impact on patient safety.
ISO 13972 scope

- Provide quality criteria for detailed clinical models, meta-information, transformations, repositories, checks and maintenance and handling of patient safety issues for control and governance of detailed clinical models.

- Specify the effects of engineering principles on the structure of detailed clinical models, e.g. when transforming the conceptual models into logical and physical representations that can be engineered in EHR systems.
DCM 13972 reference model

The Interoperability Capacity Model

- Reference Models
  - computing structure
  - data types
  - detailed clinical models / artefacts
- Information models
- Representational Forms (UML, XML, ADL)
- Schemas
- Terminology
- Terminology Servers
- Platforms (SOA, Technical Message Development, HL7 2.X, CDA)
- Integration Platform
- Interoperability Requirements based on Function
- Applications

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DCM 13972 core areas

- Clinician involvement and endorsement
- Content evidence based, data element level and meta information
- Modeling criteria
- Repository and Governance
- Patient Safety

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Added value of DCM

- Clearity professional content
- Technical implementation spec EHR
- Reusable in HL7 v3 messages CP, CDA, (choicebox)
- Transform to HL7 v3 templates
- Transform to 13606 archetypes
- Snomed CT implementation support
- Now uses in several projects
- International
- CCD Standard and other new projects
Dank u voor uw aandacht!

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