Development of Evaluation Metrics for DCM

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Background

• Solid growth in the development of DCM: CEM, openEHR Archetype, HL7, NHS Clinical Template, CIM, CCM, etc.

• Use of DCM to capture clinical contents

• Current Quality Requirements: too broad and abstract for application in practice

• Need concrete measures (qualitative and/or quantitative) to evaluate DCMs

• CEM : Clinical Element Model/CIM : Clinical Information Model /CCM : Clinical Contents Model
Objectives

• Development of evaluation metrics for DCM

• Application of the metrics to DCM
Methods

• Comparison and analysis of current quality requirements documents
  – Archetype Quality Criteria (chosen)

• Concretize Archetype Quality Criteria into measurable and explicit evaluation metrics

• (future work): Improvement of the metrics thru. testing and use of Delphi panel for finalization
Archetype Quality Criteria
(Dipak Kalra et al, 2008)

• Business requirements
• Clinical requirements
• Technical requirements
• Information governance requirements
• Archetype repository requirements
Example Metrics

- An archetype shall include or reference one or more concepts from an internationally registered terminology system to which it corresponds most closely, in order to permit its clinical scope to be widely understood, and compared with other archetypes (Clinical domain coverage 1, Clinical Requirements in Archetype Quality Criteria)

1) An archetype/DCM shall include or reference one or more concepts from (an) Internationally registered terminology system(s)
2) An archetype/DCM shall include OID of internationally registered terminology systems
3) An archetype/DCM shall include or reference Version(s) of Internationally registered terminology systems
4) Concept(s) or data element of an archetype/DCM shall include or reference ID(CUI)(s) of Internationally registered terminology systems
5) In case of the absence of proper concept(term)s in any international standard terminology system, the archetype/DCM should provide for ways to process exceptions
6) There should be a review process in place in case of cross-terminology mapping of concepts
7) A committee should be in place to enforce proper mapping
8) There should be a feedback mechanism(i.e. wiki) in place In case of dispute in mapping instances.
Thank You
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