Facilitating the openEHR approach

Organizational structures for defining high-quality archetypes

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openEHR

• **open** E**lectronic** H**ealth** R**ecord**

• **two level modelling approach**

• **based on ‘archetypes’**
Two level modelling approach

Separation of technical implementation and representation of clinical content.
Archetypes

- are reusable, structured models of clinical information concepts
- e.g. ‘test result’, ‘blood pressure’,...
- central idea:

Reuse one archetype in as many systems as possible.
Reuse of Archetypes

• …reduces time and effort for design
• …enables syntactic and semantic interoperability
Problem

• Building archetypes which are
  – of a high-quality and
  – accepted among all domain experts
    for (inter)national use

requires appropriately governed
development processes!
Three prerequisites for reusable, high-quality archetypes

• evidence based knowledge and design recommendations

Which **structures and processes** are necessary to assure these prerequisites?

(usability / professional correctness)
Goals

…to propose a model which enables

• international and inter-professional coordination of archetype development

• and maintenance.
Design Research

- field reports
- expert opinions
- own experiences
- experiences from other standards development processes
A Model for Archetype Design and Maintenance

• …describes necessary structures
  – including a role concept / organizational structures
  – process descriptions
Process Model

Necessity for a certain archetype

Search repository for suitable archetype

Archetype available?  yes  

Use of archet.

Archetype available?  no  

Choice of responsible committee
Supervision of development

Development of archetype

Setting of archetype state from author to committee draft

(Major) review of archetype (including validity report)

Archetype accepted?

Setting of archetype state to 'committee-final'

user, developer...

Setting of archetype state to 'author draft'

no

yes
Process Model

(Minor) review of archetype

Archetype accepted?

yes

Publication of archetype

Use of archet.

no
Discussion

- The proposed model should lead to high-quality archetypes.
- International repository of archetypes could reduce time and effort for designing archetypes.
- A risk might be the complexity of the process.
- A practical realization of the model is necessary to check its applicability of and to optimize it.
### Tool to Support the Model

#### Name of medication
The name of the intervention - which may be coded
- **Text**: 1.1 mandatory
- **Free or coded text**

#### Generic name
The generic name of the drug which is an alternative name to the name of medication
- **Text**: 0..1 optional
- **Free or coded text**

#### Strength per dose unit
The strength of the medication
- **Choice**
  - **Quantity**
    - **Property: Mass**
      - Units: pg, mg, gm
    - **Property: Mass (BU)**
      - Units: BU, mBU, nBU

#### Dose unit
The dose unit that is given for this type of medication
- **Coded Text**: 1.1 mandatory
- **Any term that is a Dose unit for this form**

#### Form
The form of the medication
- **Coded Text**: 0..1 optional
- **Any term that is a form of medication**

#### Dose
The dose to be administered at one time
- **Cluster**: 0..1 optional
Conclusion and Perspective

• simple ‘wikis’ and content versioning systems are **not sufficient** to support these complex steps

• **dedicated tools** are necessary

• once model and tools are well engineered and evaluated, both should be introduced in larger (international) context
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