ICD 11 FC and SNOMED CT – finding as Ontologies of Clinical Situations

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A clinical situation with X is a phase of a patient's life in which a condition of the type X is wholly present.

A clinical situation without X is a phase of a patient's life that does not include any condition of the type X at any time.
Conjunction Example (ICD11 draft)

- Fatty acid oxidation and ketogenesis disorder
- dilated cardiomyopathy

```
Fatty acid oxidation and ketogenesis disorder  Situation
                  isA
                  ↓
   HT3.3115  Fatty acid oxidation and ketogenesis disorder with dilated cardiomyopathy  Situation
```

```dls
dilated cardiomyopathy  Situation
                  isA
                  ↓
   HT3.3115  Fatty acid oxidation and ketogenesis disorder with dilated cardiomyopathy  Situation
```
Example (ICD11 draft)

HZ8

**Chronic peripheral venous insufficiency**

HZ8.1
Lower limb venous hypertension

HZ8.2
Lower limb venous telangiectases

HZ8.3
Lower limb varicose veins

Situation

isA

clinical disposition?

clinical process?

clinical structure?

isA

isA

isA

Situation
Situations in SNOMED CT

• Many Is-a links in the SNOMED finding hierarchy only plausible for situations (Tetralogy of Fallot example), cf. eHealth 2012 paper

• Very difficult to draw a line between conditions and situations, cf. AMIA 2012 paper

• Caveat: Bipartition in existing SNOMED situation hierarchy (context model):
  – Situations proper (e.g. Has a red eye)
  – Information entities (e.g. Suspected sarcoma)

• See MEDINFO 2012 submission on the SNOMED CT context model
Open issues (II)

• Consensus in both communities
• Action to "officially" declare SNOMED CT findings/disorders as Clinical situations
• "Situation" in FSNs and text definitions
• What about disjointness of ICD categories?
  – Tricuspid stenosis and Mitral stenosis are disjoint conditions
  – Situation with Tricuspid stenosis and Situation with Mitral stenosis are not disjoint
    (only very few situations are really disjoint, e.g. pregnancy and prostate cancer)
  – Axiomatization of "Clinical Situation": JAMIA paper under review
Open issues (II)

- Exclusions:
- Many ICD class that carry (or inherit) exclusions
- Classes with exclusions are managed in the foundational component
- Classes with exclusions do normally not exactly map to SNOMED CT concepts
  - e.g. icd:Acute pericarditis excludes rheumatic p.
  - icd:Acutepericarditis equivalentTo sct:AcutePericarditis and not RheumaticPericarditis