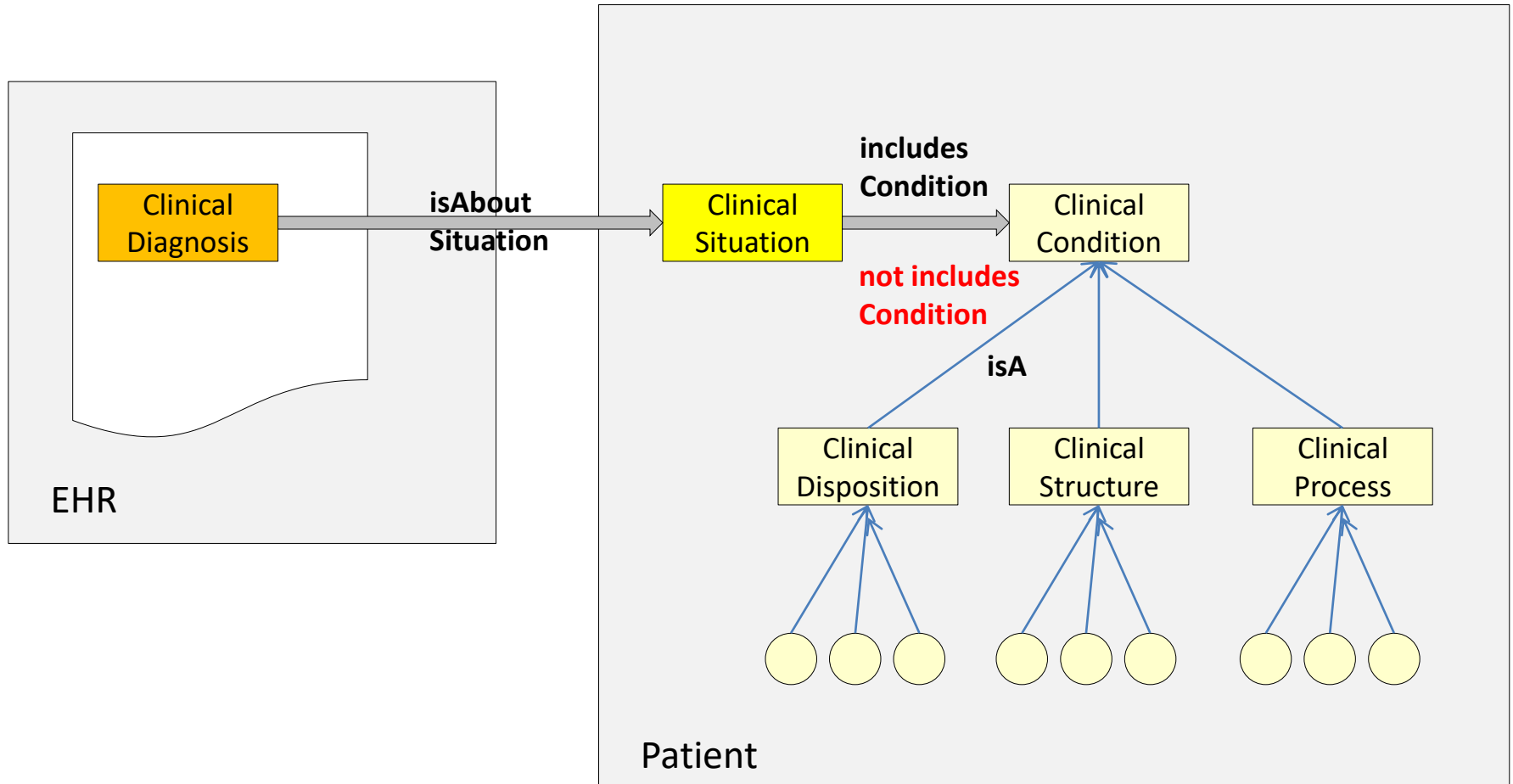# ICD 11 FC and SNOMED CT – finding as Ontologies of Clinical Situations
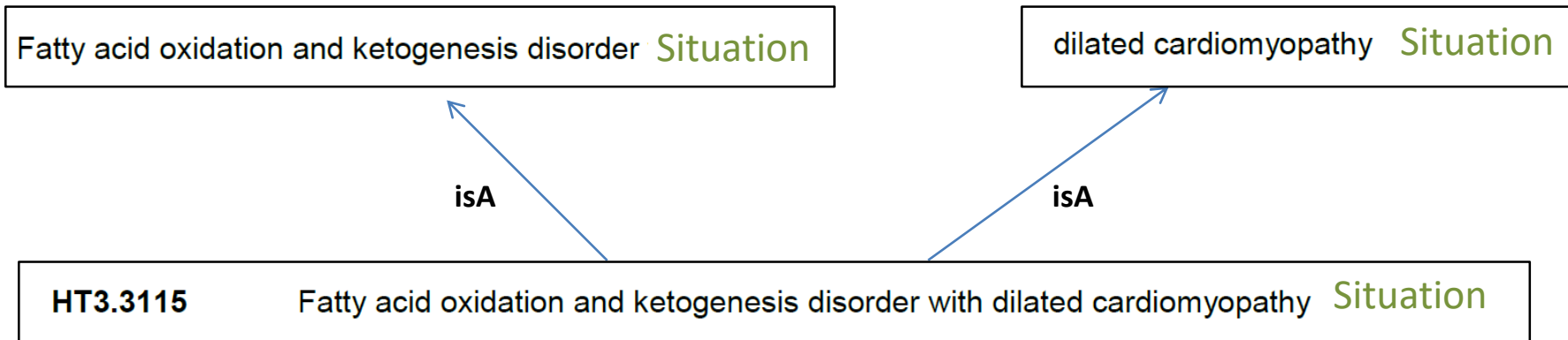
Stefan Schulz

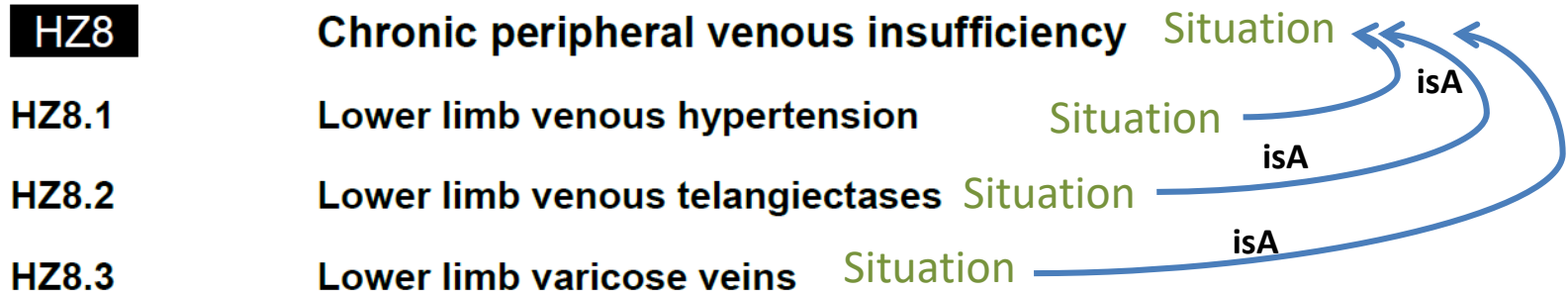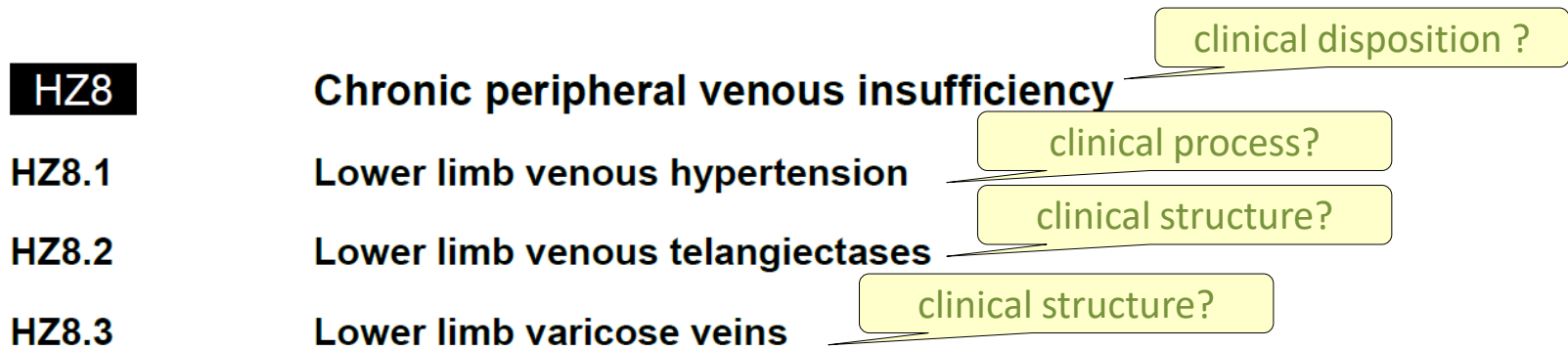# Model according to SemanticHealthNet

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)

Example (ICD11 draft)

HZ8 **Chronic peripheral venous insufficiency** — *clinical disposition ?*

HZ8.1 **Lower limb venous hypertension** — *clinical process?*

HZ8.2 **Lower limb venous telangiectases** — *clinical structure?*

HZ8.3 **Lower limb varicose veins** — *clinical structure?*

HZ8 **Chronic peripheral venous insufficiency** — Situation

HZ8.1 **Lower limb venous hypertension** — Situation — isA

HZ8.2 **Lower limb venous telangiectases** — Situation — isA

HZ8.3 **Lower limb varicose veins** — Situation — isA

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*)

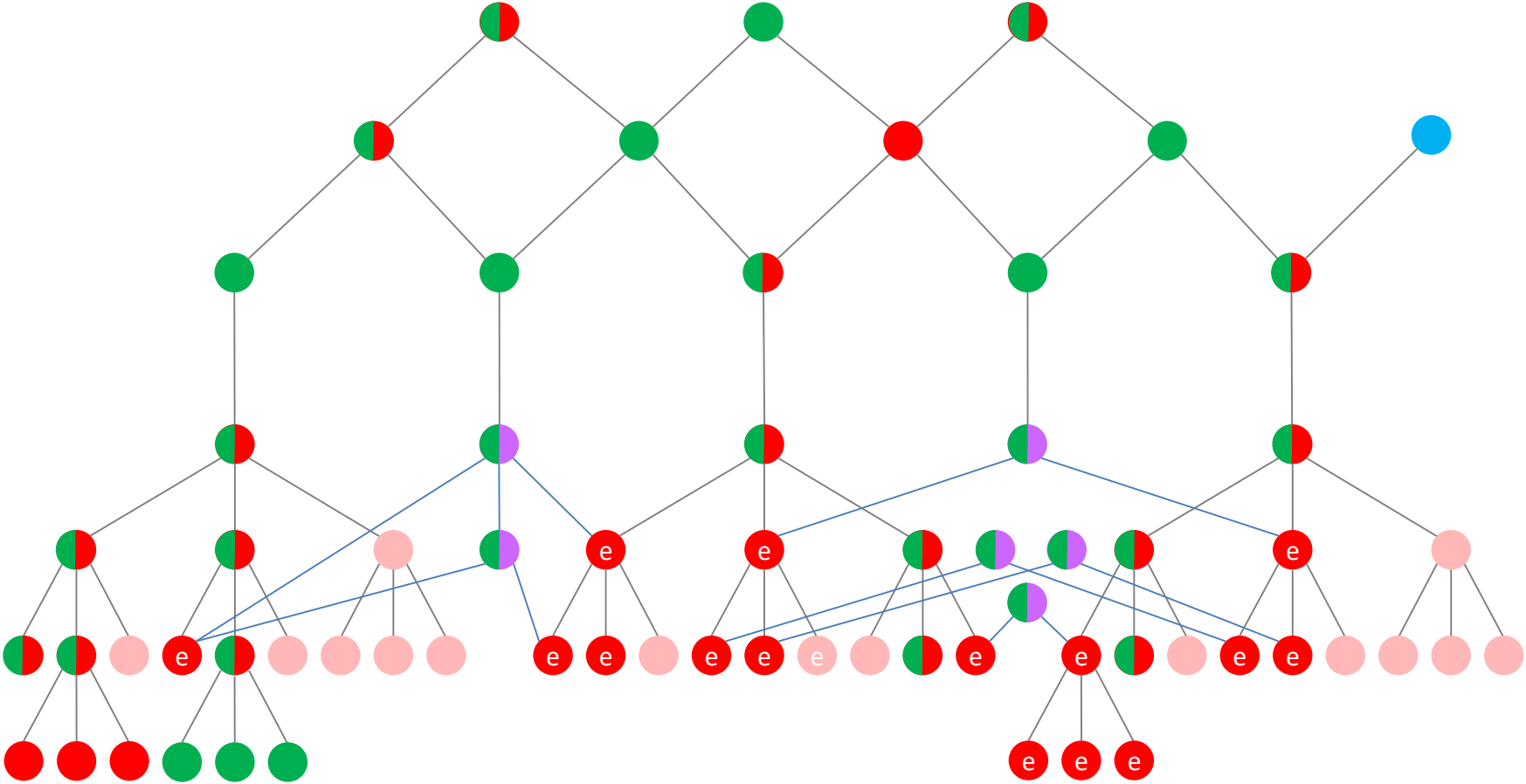- See MEDINFO 2012 submission on the SNOMED CT context model

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 <u>conditions</u>
  - <u>*Situation*</u> *with Tricuspid stenosis* and <u>*Situation*</u> *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

Exclusions and common ontology