



Semantic approaches to subset management. Lessons learned from clinical template research

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Content-based management of subsets

Use cases

- Subset evaluation
- Design based on existing subsets
- Consensus about subsets
- Analysis of the basis for cross-organisational retrieval

What semantic approaches can be applied to subset management?

Linking use cases to functions

Use cases

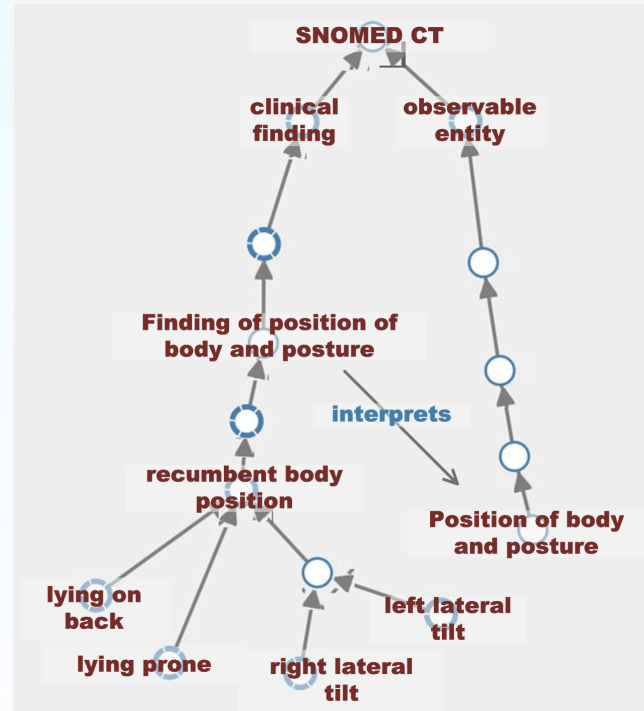
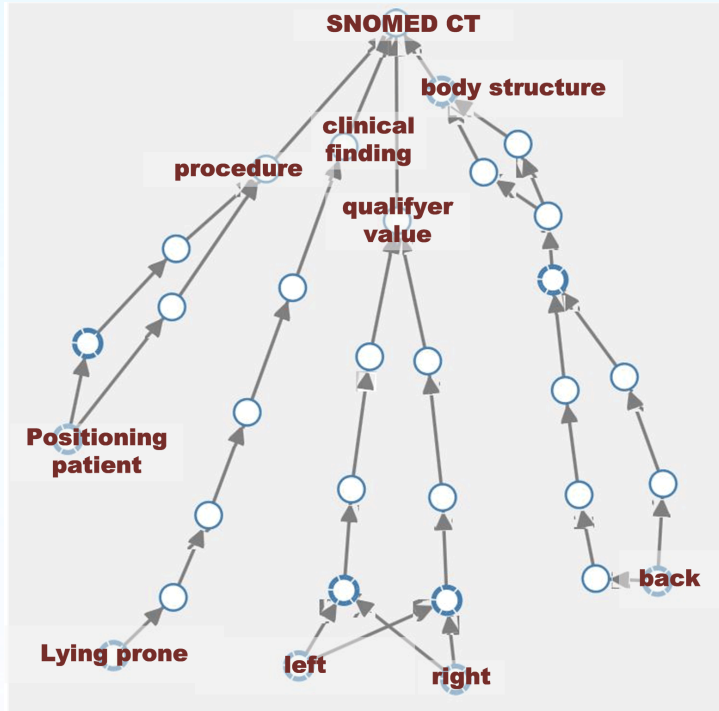
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Evaluate consistent and coherent concept selection

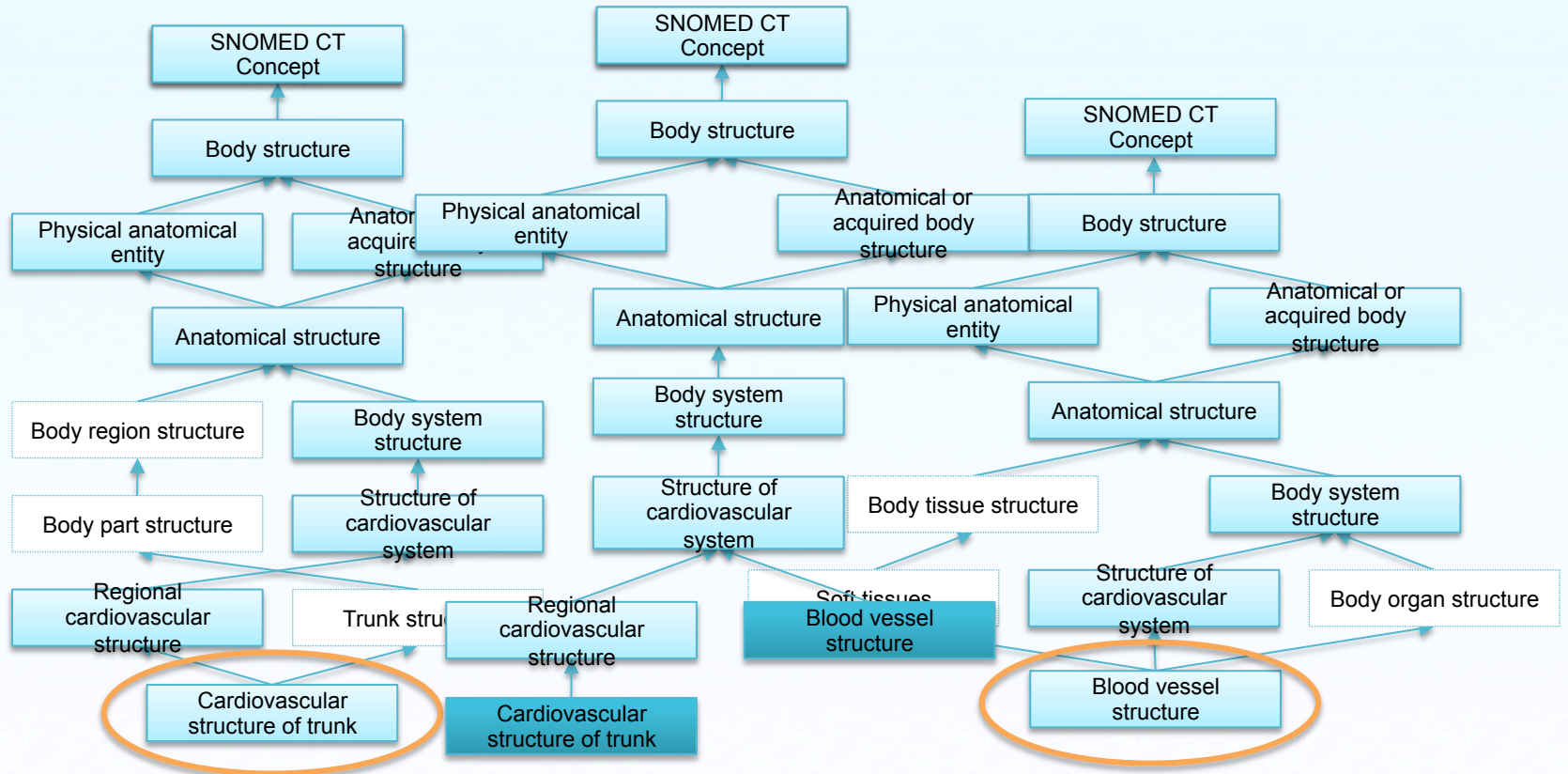
Subset comparison and Identification of overlap

Identify existing subsets matching requirements

Why is coherent concept selection important?

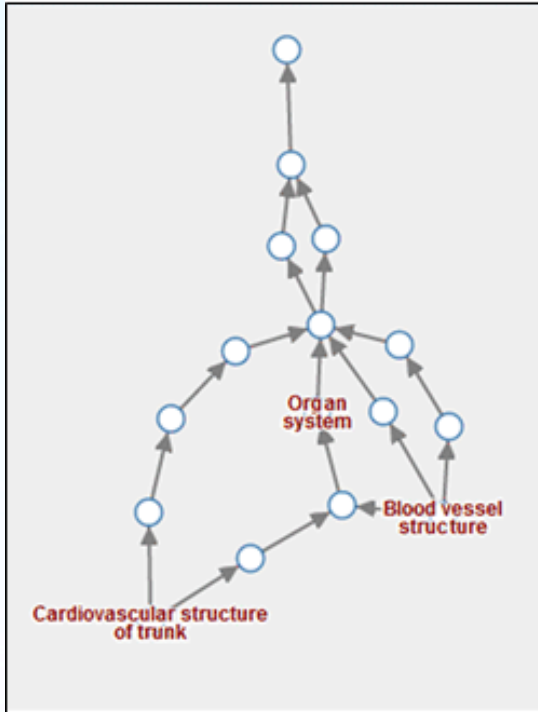


Onset: Merged graphs

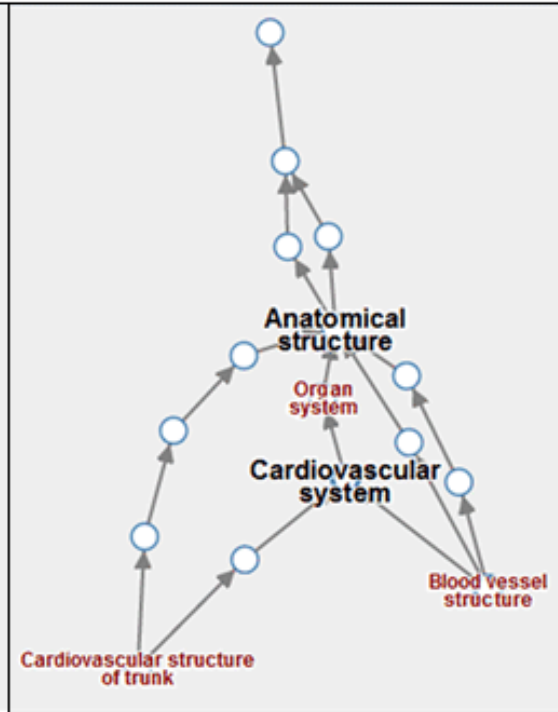


Visualization of a single subset

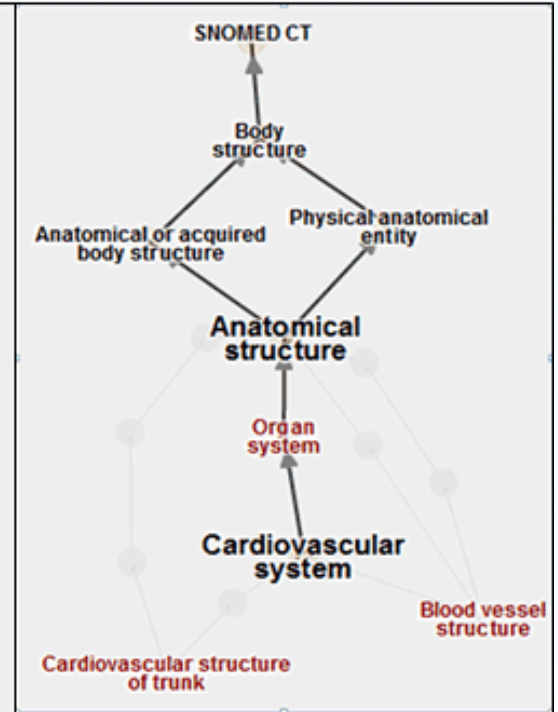
A. Merged trees (Interest Set)



B. Least Common Parents



C. Common concepts and paths



Evaluating coherent subsets

Subset management

Available subsets	c
nlm nursing problems	0.6
HC nursing problems	0.7
HC nursing procedures	0.8
Problem list	0.5

Focus: Home care nursing problems

Coherency measure
e.g. based on semantic
similarity

Linking use cases to functions

Use cases

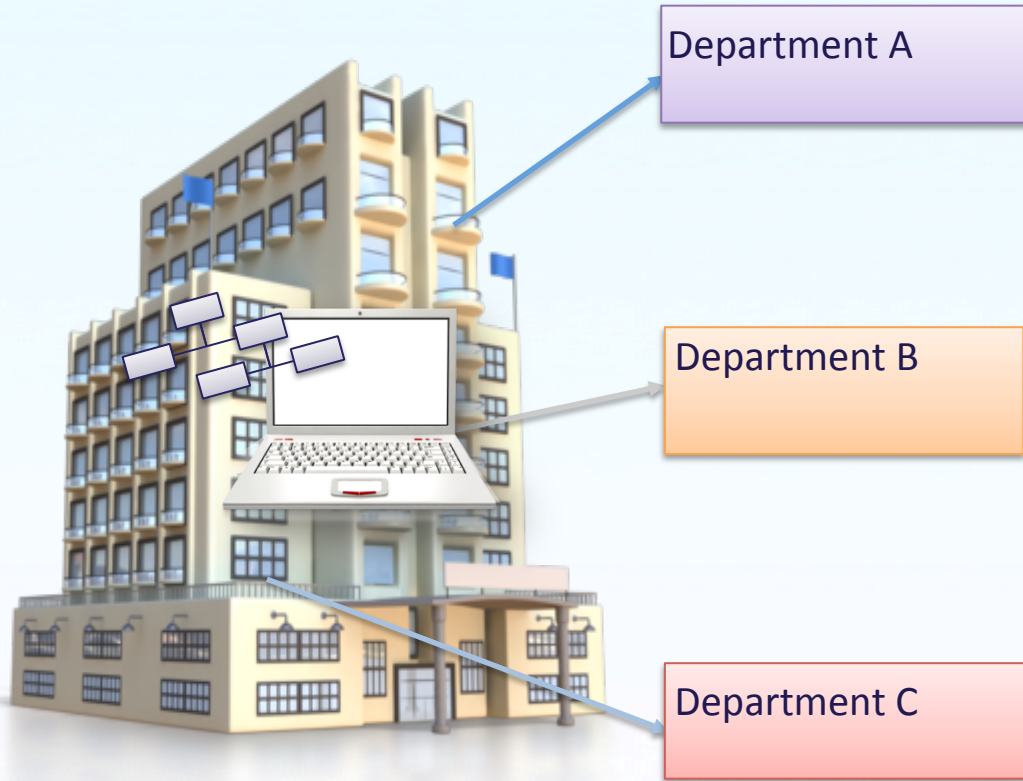
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Subset comparison and Identification of overlap

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Subsets in a local setting



RECORD NOTE C - PATIENT DDDMMYY-XXXX

Family history

- Breast cancer
- Hypertension
- Pneumonia
- Diabetes mellitus type 2

Save

Preoperative xxx

Hip prosthesis:

- Total replacement of hip
- An other procedure
- A third procedure

Select hip prosthesis

- Charnley total hip prosthesis
- Elite total hip prosthesis
- Omnifit total hip prosthesis
- Sheehan total hip prosthesis
- Stanmore total hip prosthesis

Current diagnosis

- Breast cancer
- Hypertension
- Pneumonia
- Diabetes mellitus type 2

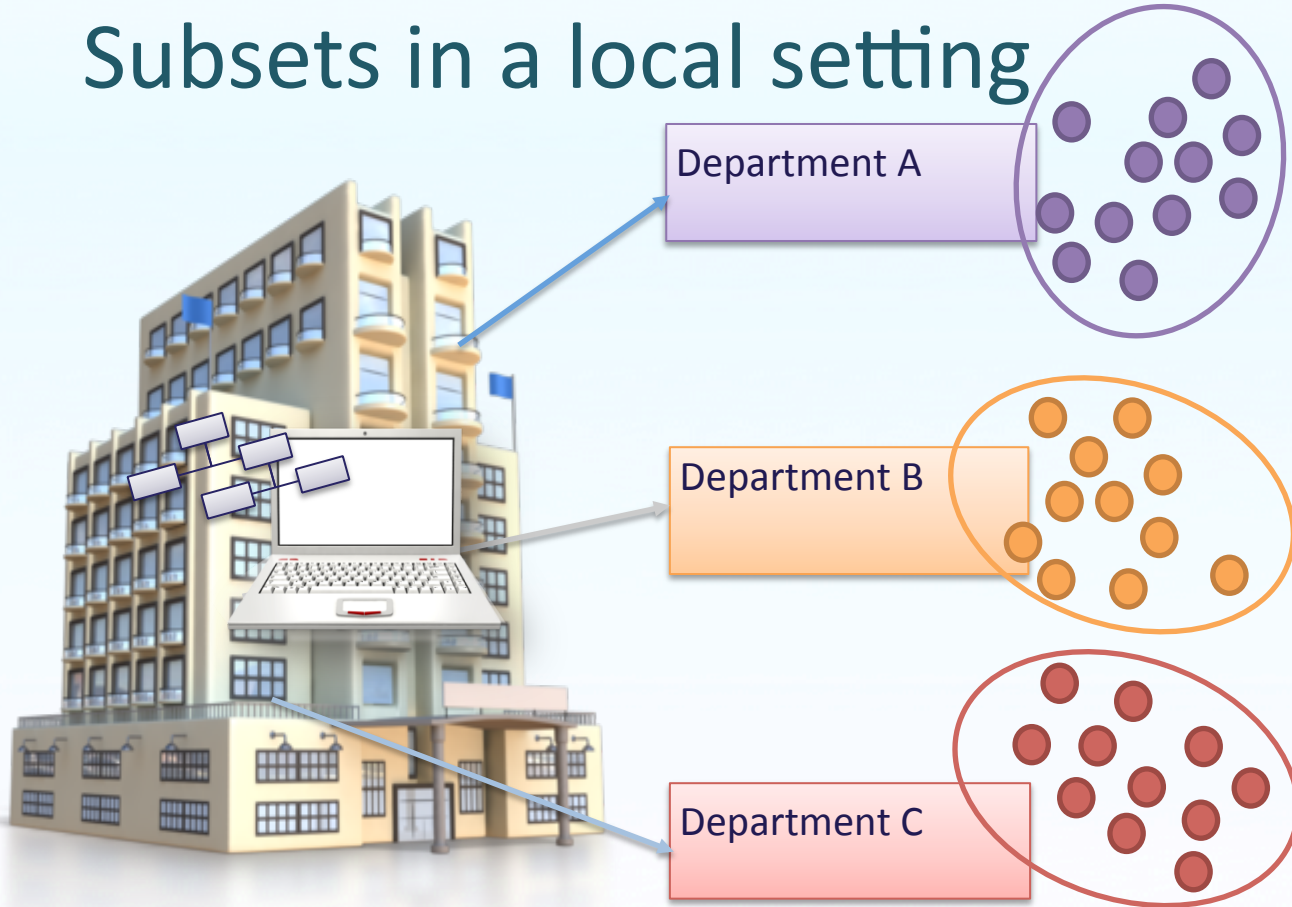
Save

DDMMYY-XXXX

Save

RECORD NOTE C - PATIENT DDDMMYY-XXXX

Subsets in a local setting

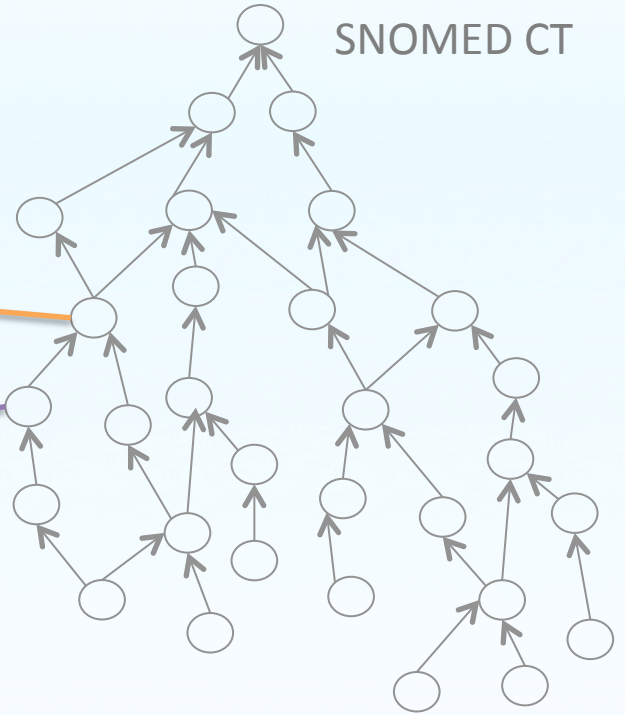


Overlap of subset members



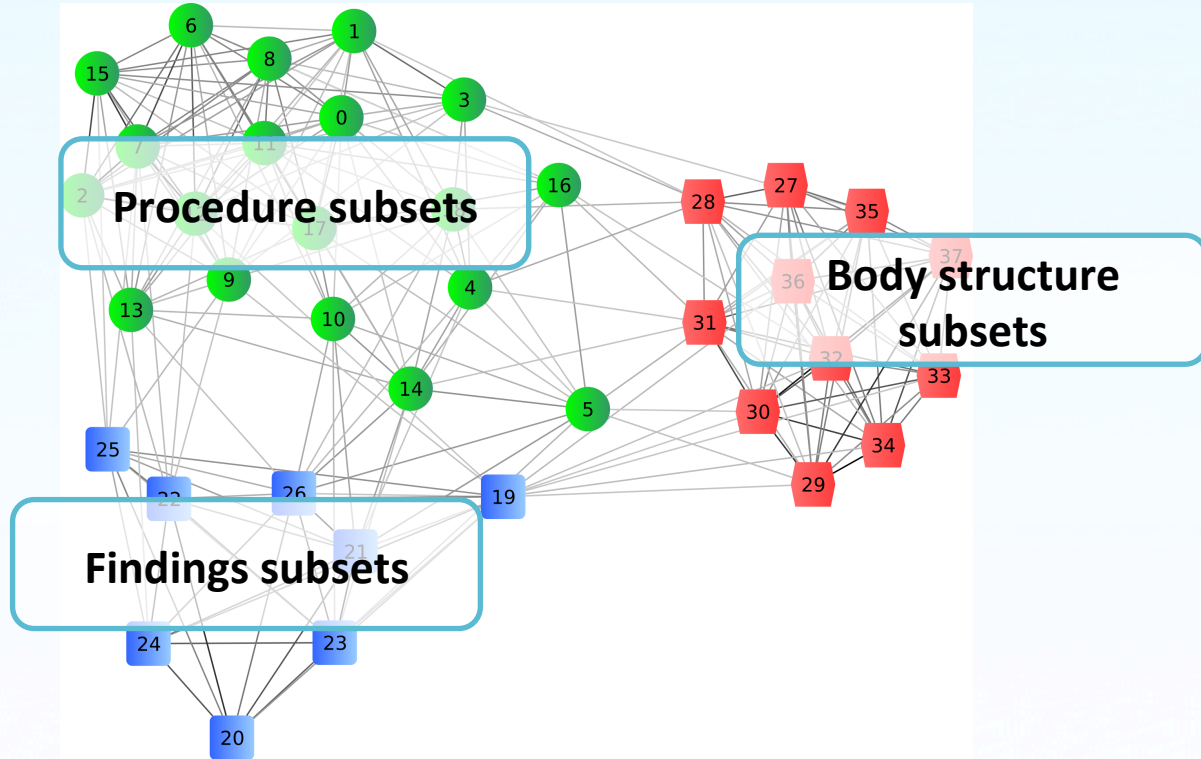
- The same concept exist in multiple subsets

Related subset members



- Important for retrieval/
query design

More than two subsets?



Linking use cases to functions

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Evaluate consistent and coherent concept selection

Subset comparison and Identification of overlap

Identify existing subsets matching requirements

Subset design based on existing subsets

Subset management

Available subsets	C	CC
nIm nursing problems	0.6	0.7
HC nursing problems	0.7	1
HC nursing procedures	0.8	0.1
Problem list	0.5	0.3

Focus: Home care nursing problems

Create New

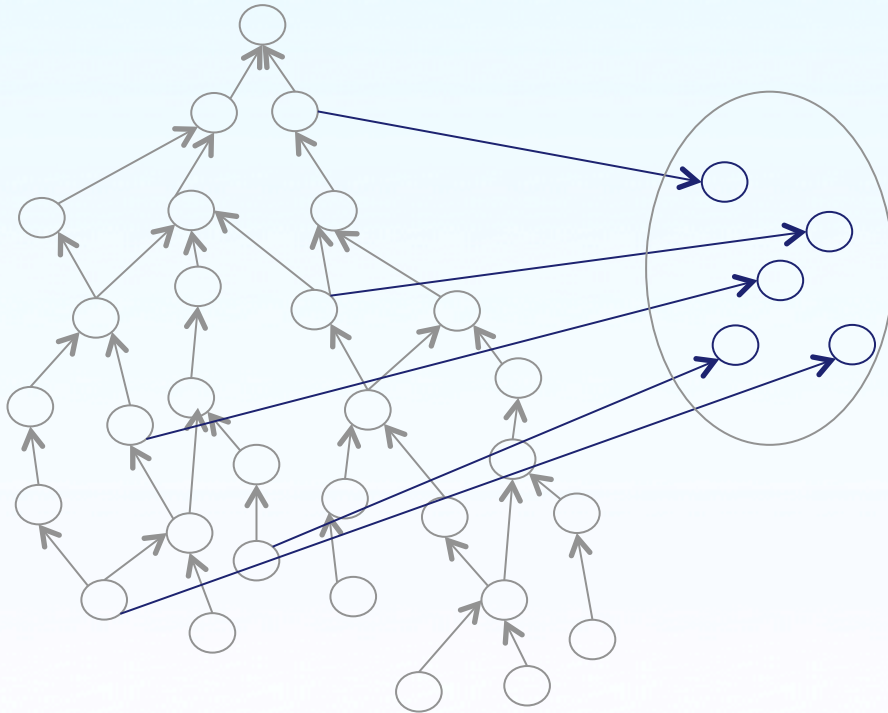
- Finding of appetite
- Thirst finding
- Nausea

Take home messages

- Subset management can be based on the semantic features of its content
 - Evaluate coherency
 - Identify overlap and relationships between subsets
 - Base new design on existing subsets
- Harmonization
 - Beneficial for interoperability



SNOMED CT subsets



- Subsets are developed to constrain the use of SNOMED CT
- Subsets can be expressed using the IHTSDO Reference set format.
- IHTSDO has focus on subsets sharing using Reference Set meta-data
- We explore methods for content-based management of subsets