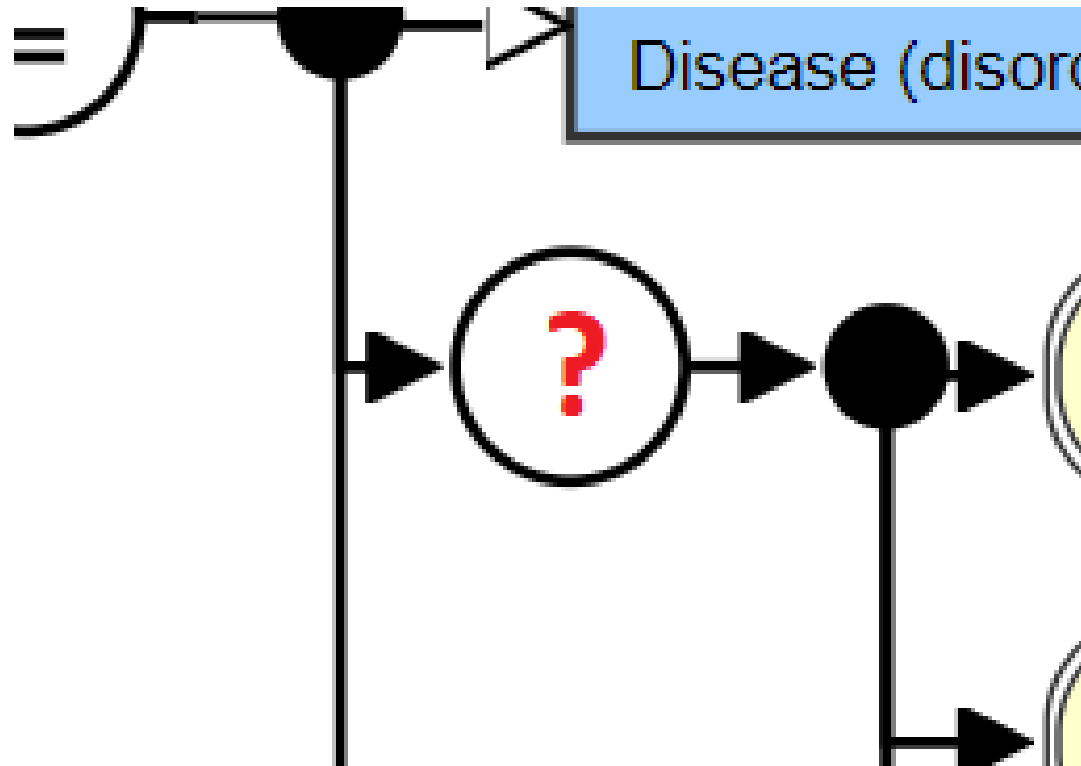


Making Role Groups Explicit



[Complete document](#)

Basic Assumptions

- Role groups are not just syntactic features they have clear meanings, just as any other SNOMED relation
- OWL requires them to be modelled as object properties with description logic semantics
- Question
 - Which is/are the explicit meaning(s) of the role group relation?
 - Can it be derived from current modelling patterns?
- Method (work in progress):
 - Inspection of frequent representational patterns
 - Analysis of examples
 - Interpreting role groups

	Pattern	Count	Pattern	Count	Pattern	Count
1	Diso ass_morp MoAb Diso fin_site BoSt	40297	10 Proc dir_subs Subs Proc method_ QuVa Proc pro_sind BoSt	2226	18 Diso ass_morp MoAb Diso fin_site BoSt Diso occurren QuVa	1555
2	Proc method_ QuVa Proc pro_sidi BoSt	18539	11 Proc method_ QuVa Proc pro_sidi BoSt Proc usi_subs Subs	2168	19 Situ ass_find Diso Situ fin_cont QuVa Situ sub_reco Pers Situ tem_cont QuVa	1502
3	Diso ass_morp MoAb Diso fin_site BoSt Diso occurren QuVa Diso pat_proc QuVa	9167	12 Find has_inte QuVa Find interpre Proc	2112	20 Find cau_agen Subs Find has_real QuVa	1459
4	Find has_inte QuVa Find interpre ObEn	5681	13 Situ ass_proc Proc Situ pro_cont QuVa Situ sub_reco Pers Situ tem_cont QuVa	2087	21 Find ass_morp MoAb Find fin_site BoSt	1430
5	Proc dir_morp MoAb Proc method_ QuVa Proc pro_sidi BoSt	4307	14 Diso has_inte QuVa Diso interpre Proc	2076	22 Proc dir_subs Subs Proc method_ QuVa	1364
6	CIDr has_boss Subs CIDr has_prai Subs CIDr has_psdv UnOf CIDr has_psdv QuVa CIDr has_psnu QuVa CIDr has_psnv QuVa	4129	15 Diso ass_morp MoAb Diso fin_site BoSt Diso pat_proc QuVa	1979	23 Diso has_inte QuVa Diso interpre ObEn	1336
7	Proc method_ QuVa Proc pro_sidi BoSt Proc usi_devi PhOb	2799	16 Diso cau_agen Orga Diso pat_proc QuVa	1948	24 Proc has_inte QuVa Proc method_ QuVa Proc pro_sidi BoSt	1321
8	Proc dir_devi PhOb Proc method_ QuVa Proc pro_sind BoSt	2688	17 Proc method_ QuVa Proc pro_site BoSt	1743	25 CIDr has_boss Subs CIDr has_csdu QuVa CIDr has_csdv QuVa CIDr has_csnu QuVa CIDr has_csnv QuVa CIDr has_prai Subs	1244
9	Diso ass_morp MoAb Diso cau_agen Orga Diso fin_site BoSt Diso pat_proc QuVa	2236				

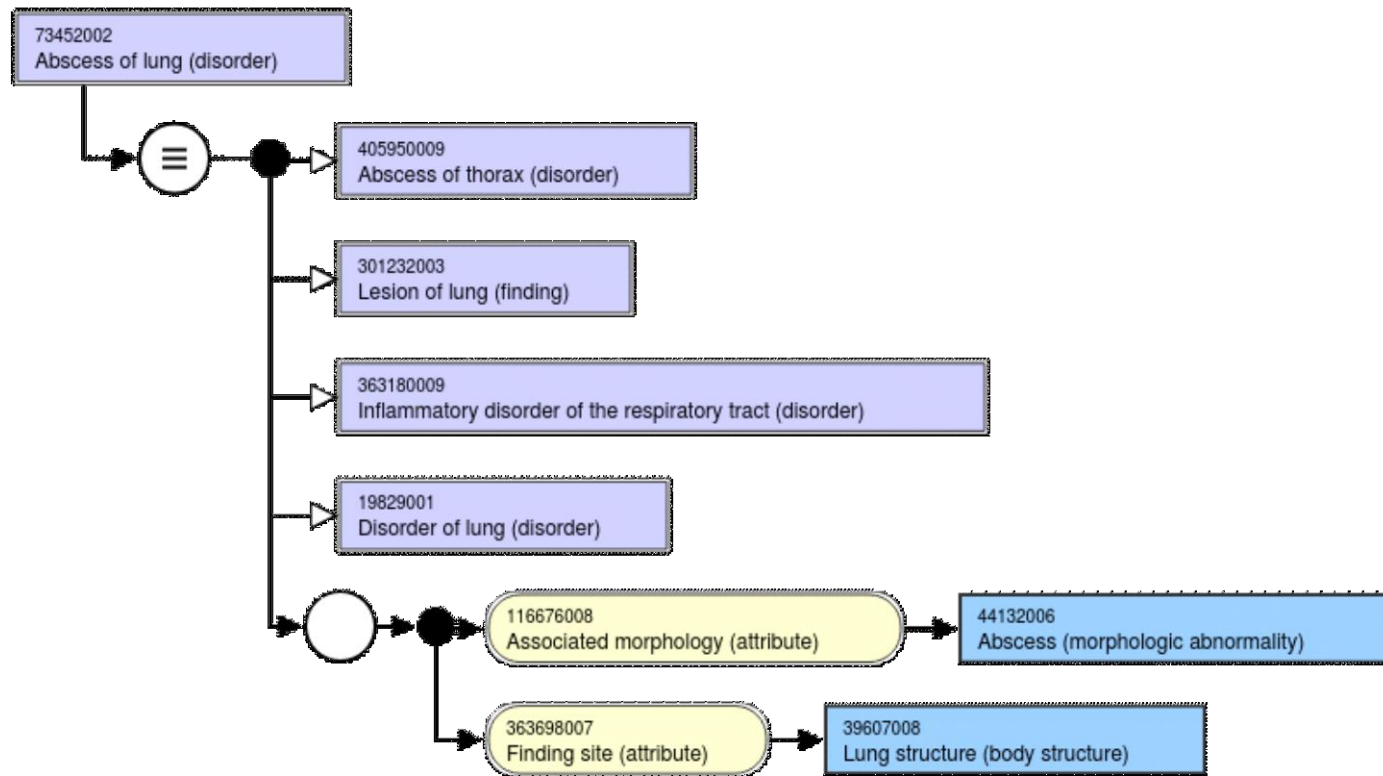
[→ complete table](#)

Pattern 1

Diso|ass_morp|MoAb
Diso|fin_site|BoSt

Occurrence: 40297

Example



RG
Interpretation

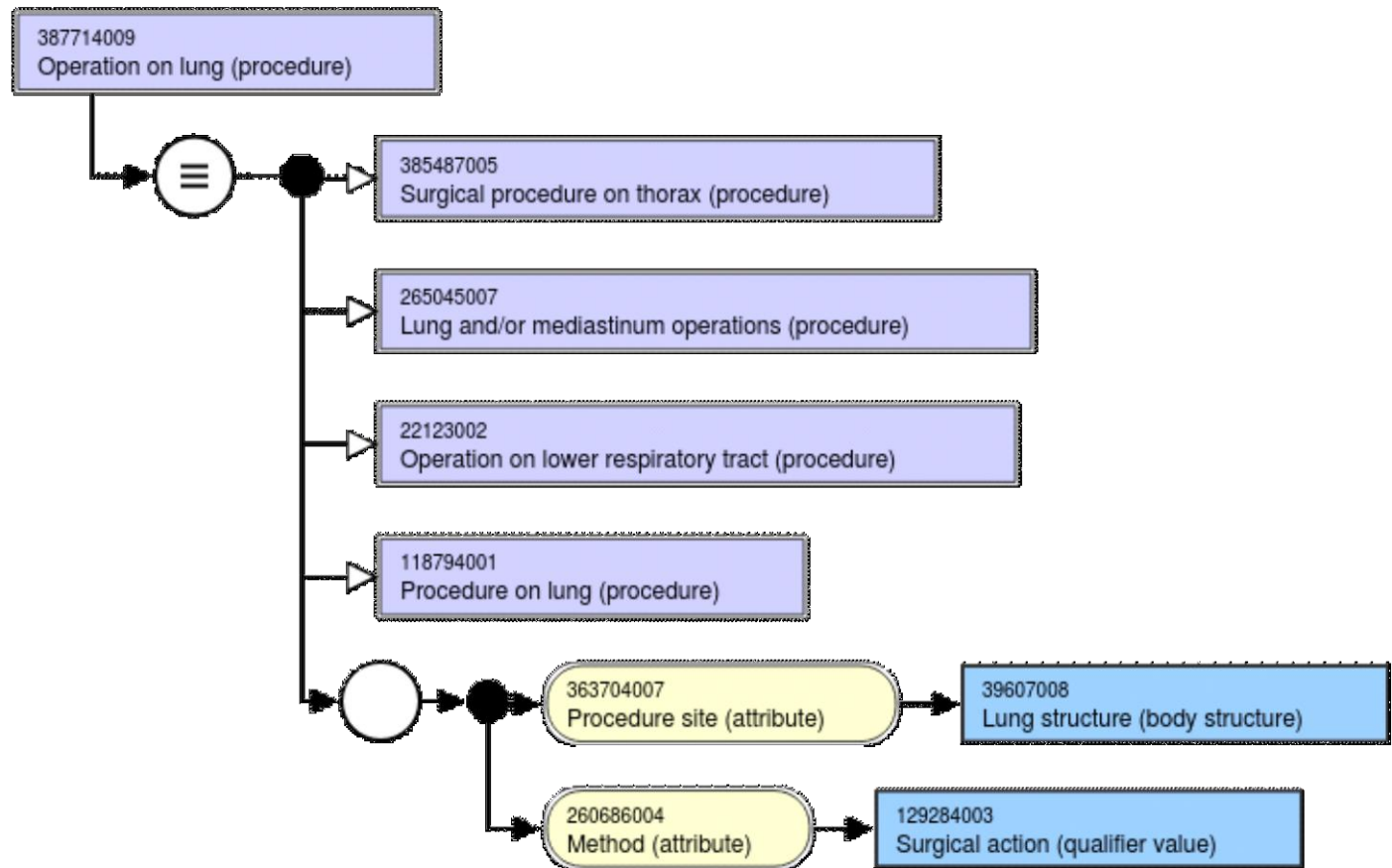
includes

Pattern 2

Proc|method_|QuVa
Proc|pro_sidi|BoSt

Occurrence: 18539

Example



RG
Interpretation

Includes

Occurrence: 9167

199879009
Congenital anomaly of skin (disorder)



38164009
Congenital anomaly of integument (disorder)

95320005
Disorder of skin (disorder)

246454002
Occurrence (attribute) → 255399007
Congenital (qualifier value)

Example

199879009
Congenital anomaly of skin (disorder) → 116676008
Associated morphology (attribute) → 49755003
Morphologically abnormal structure (morphologic abnormality)

370135005
Pathological process (attribute) → 308490002
Pathological developmental process (qualifier value)

363698007
Finding site (attribute) → 39937001
Skin structure (body structure)

95320005
Disorder of skin (disorder)

246454002
Occurrence (attribute) → 255399007
Congenital (qualifier value)

116676008
Associated morphology (attribute) → 49755003
Morphologically abnormal structure (morphologic abnormality)

370135005
Pathological process (attribute) → 308490002
Pathological developmental process (qualifier value)

363698007
Finding site (attribute) → 39937001
Skin structure (body structure)

RG
Interpretation

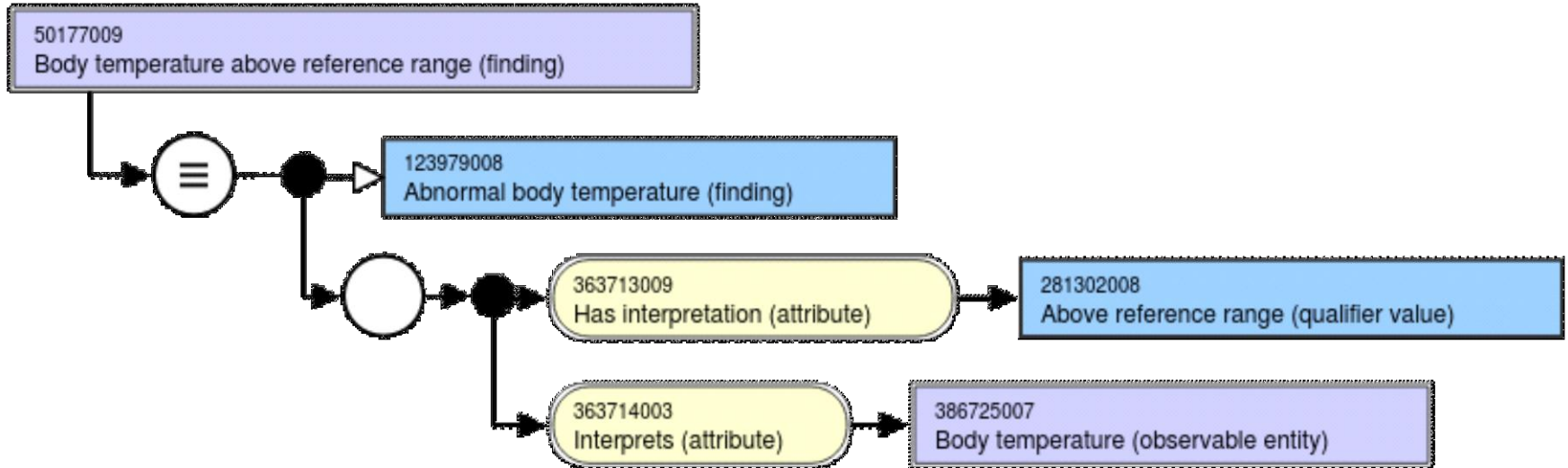
Includes

Pattern 4

Find|has_inte|QuVa
Find|interpre|ObEn

Occurrence: 5681

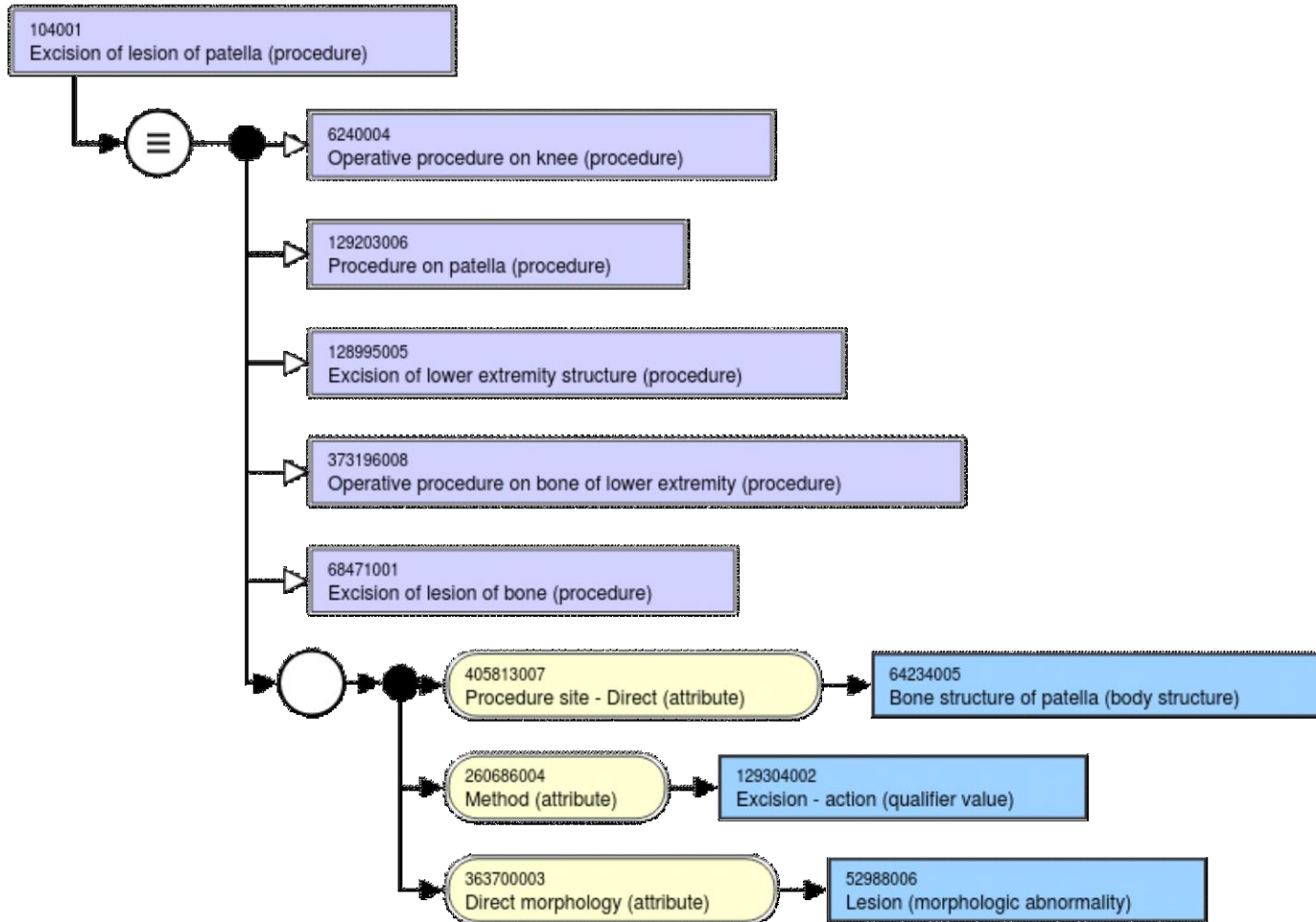
Example



RG
Interpretation

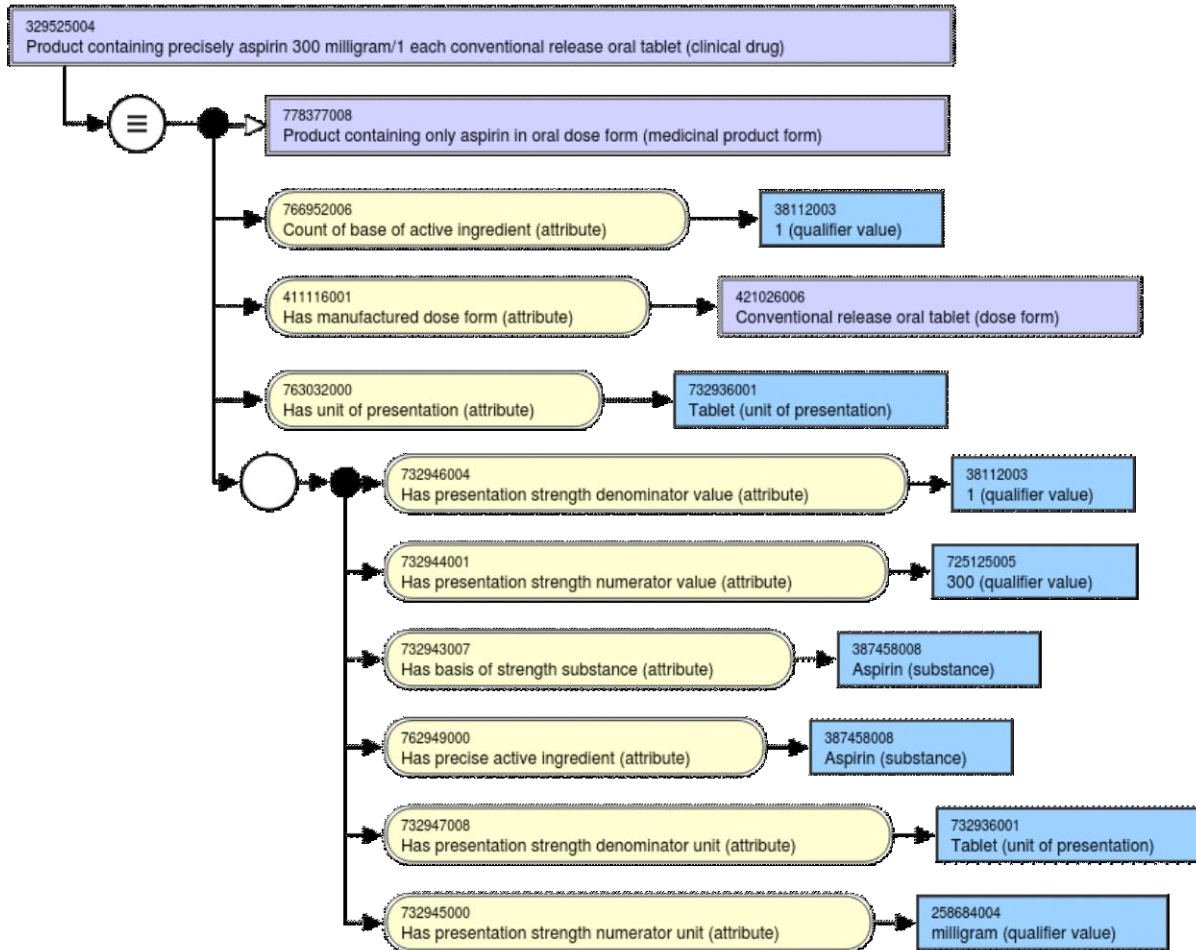
(?)

Example



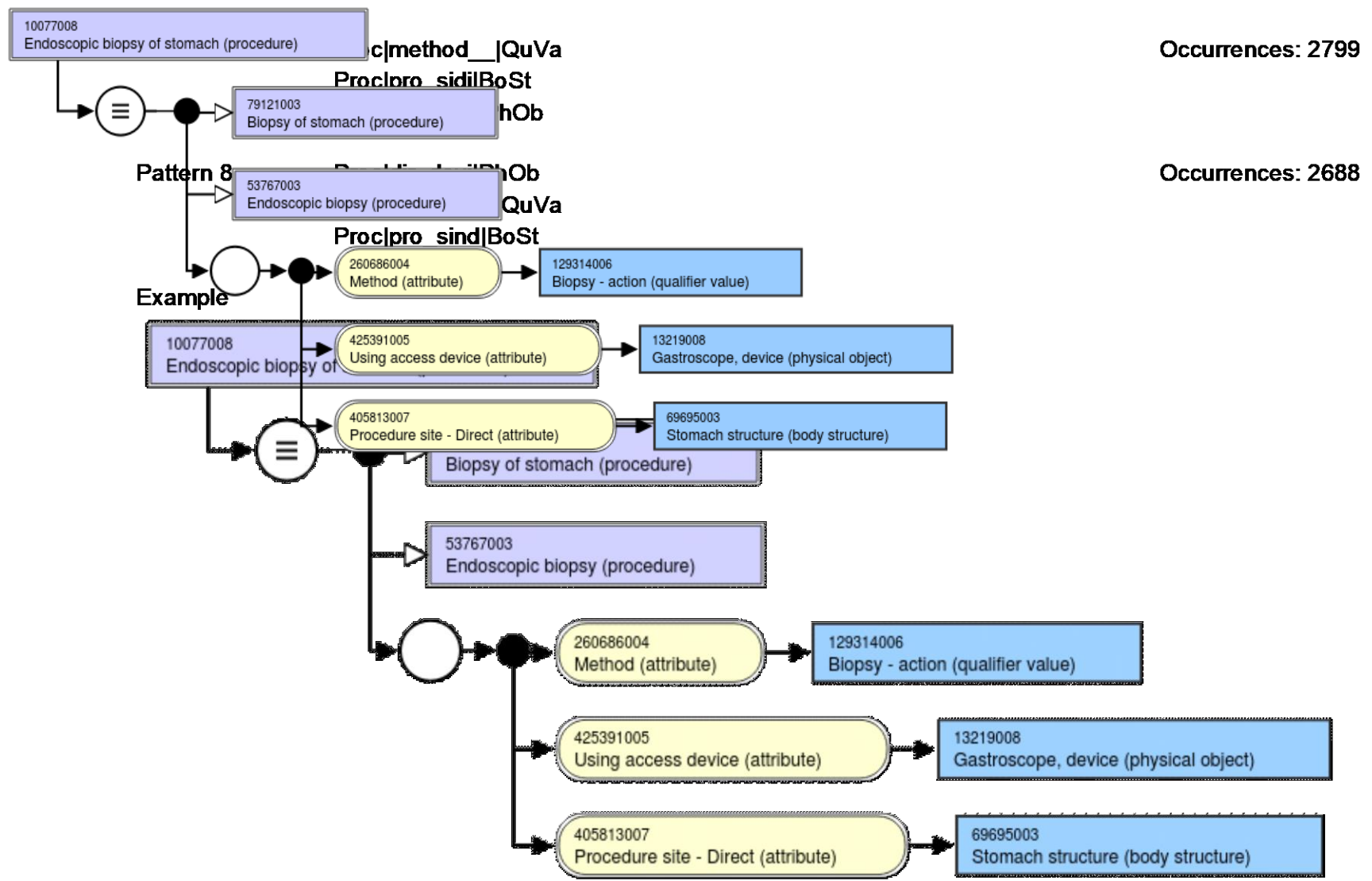
CIDr|has_boss|Subs
 CIDr|has_prai|Subs
 CIDr|has_psdul|UnOf
 CIDr|has_psdv|QuVa
 CIDr|has_psnu|QuVa
 CIDr|has_psnv|QuVa

Example



RG
 Interpretation

Includes

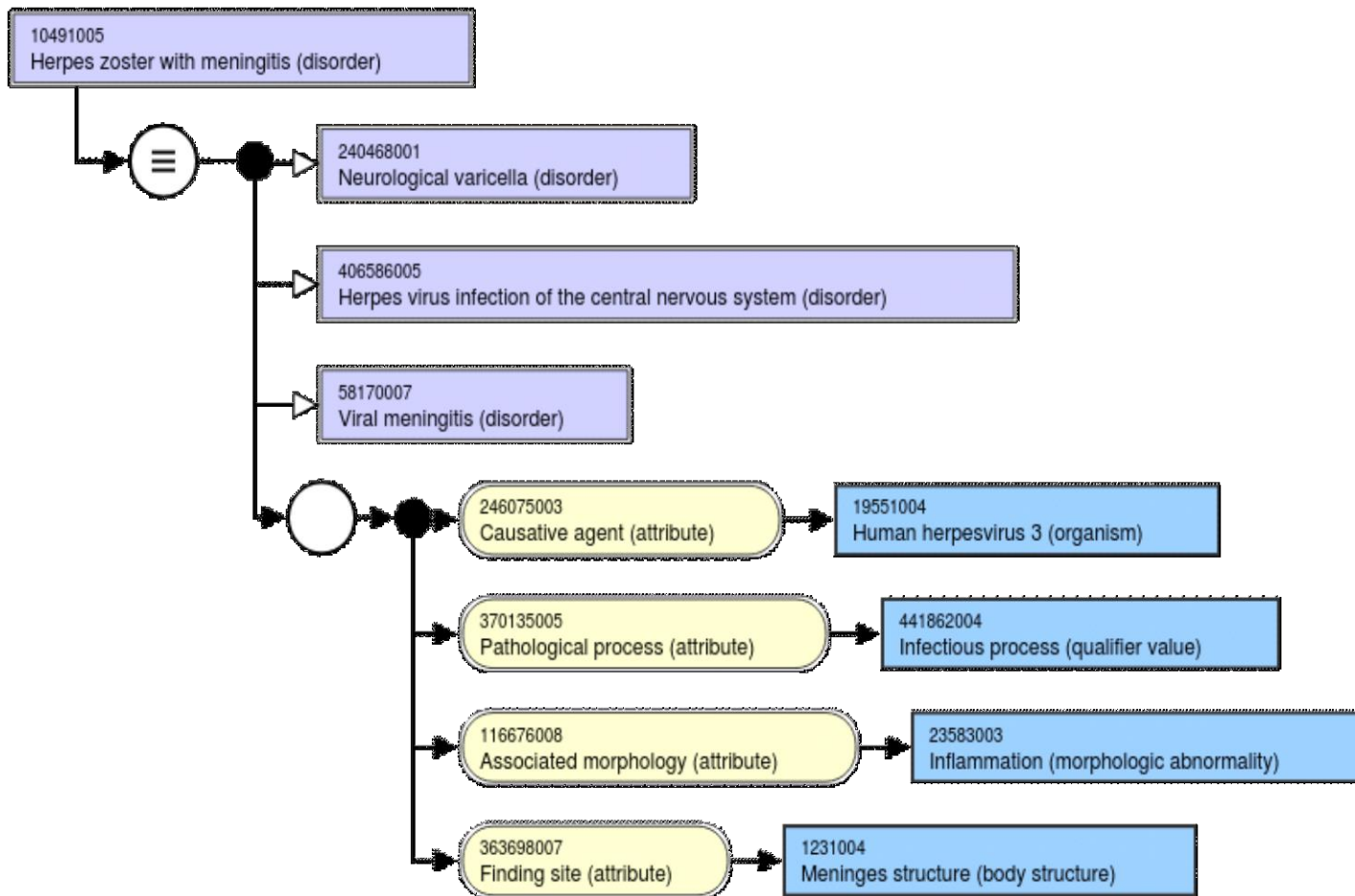


Occurrences: 2799

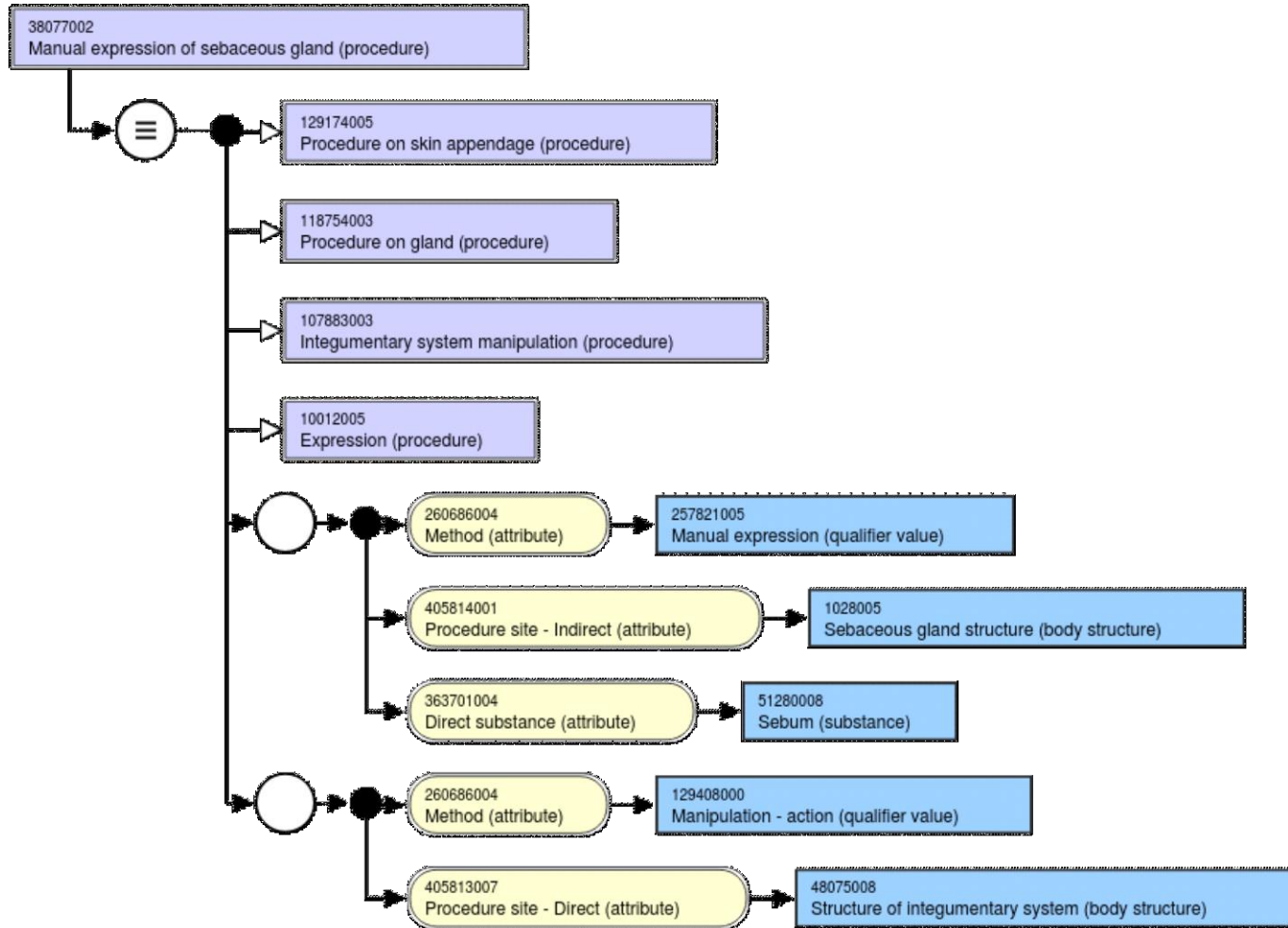
Occurrences: 2688

RG Interpretation

Example



Example



RG
Interpretation

Includes

Pattern 11

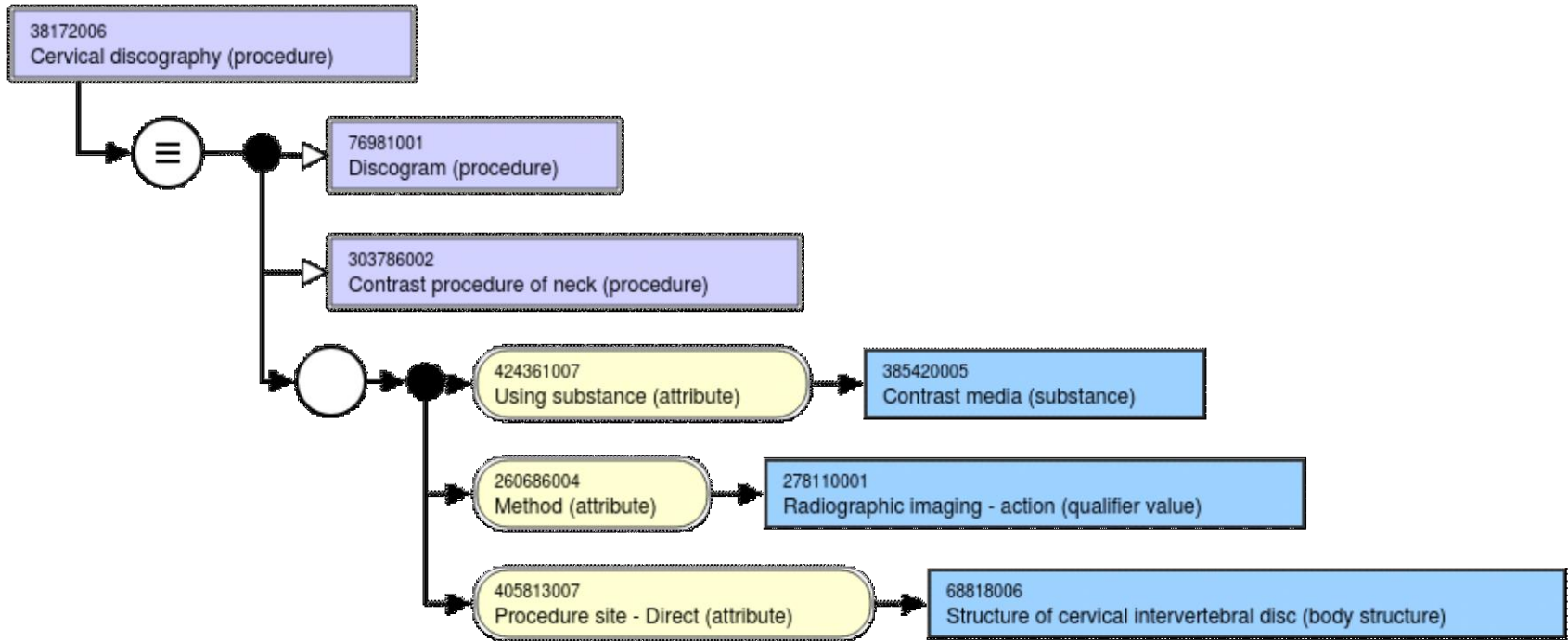
Proc|method__|QuVa

Proc|pro_sidi|BoSt

Proc|usi_subs|Subs

Occurrences: 2168

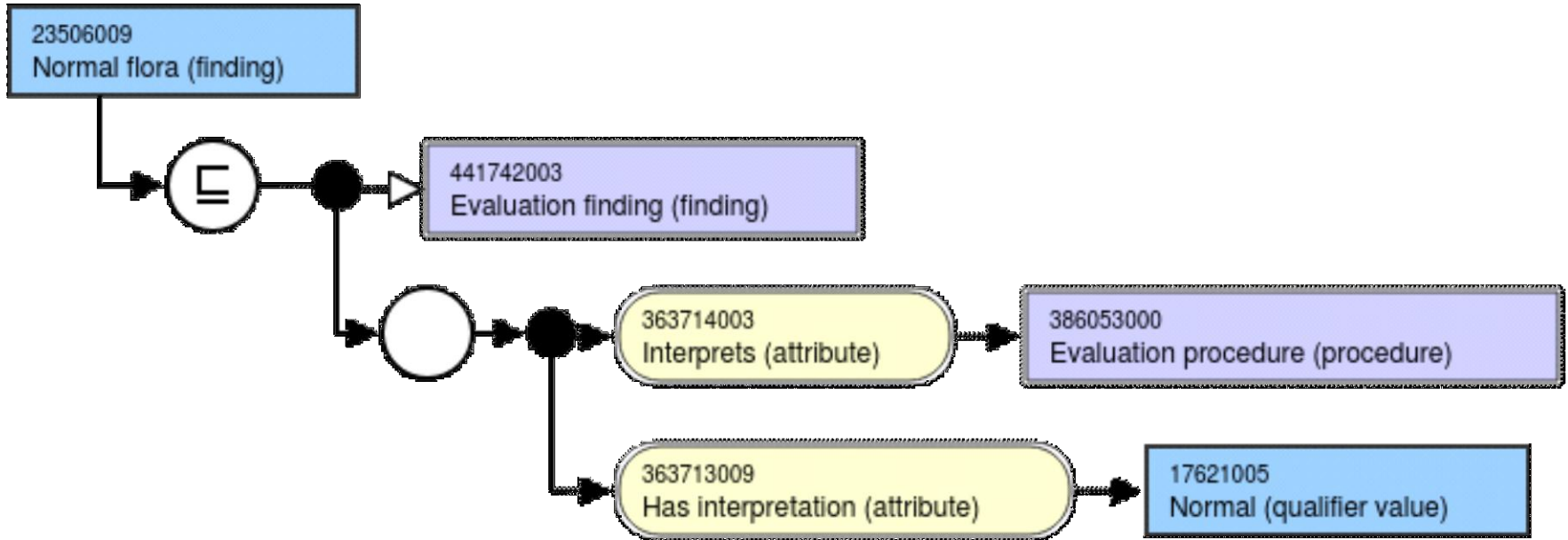
Example



RG
Interpretation

Includes

Example



RG
Interpretation

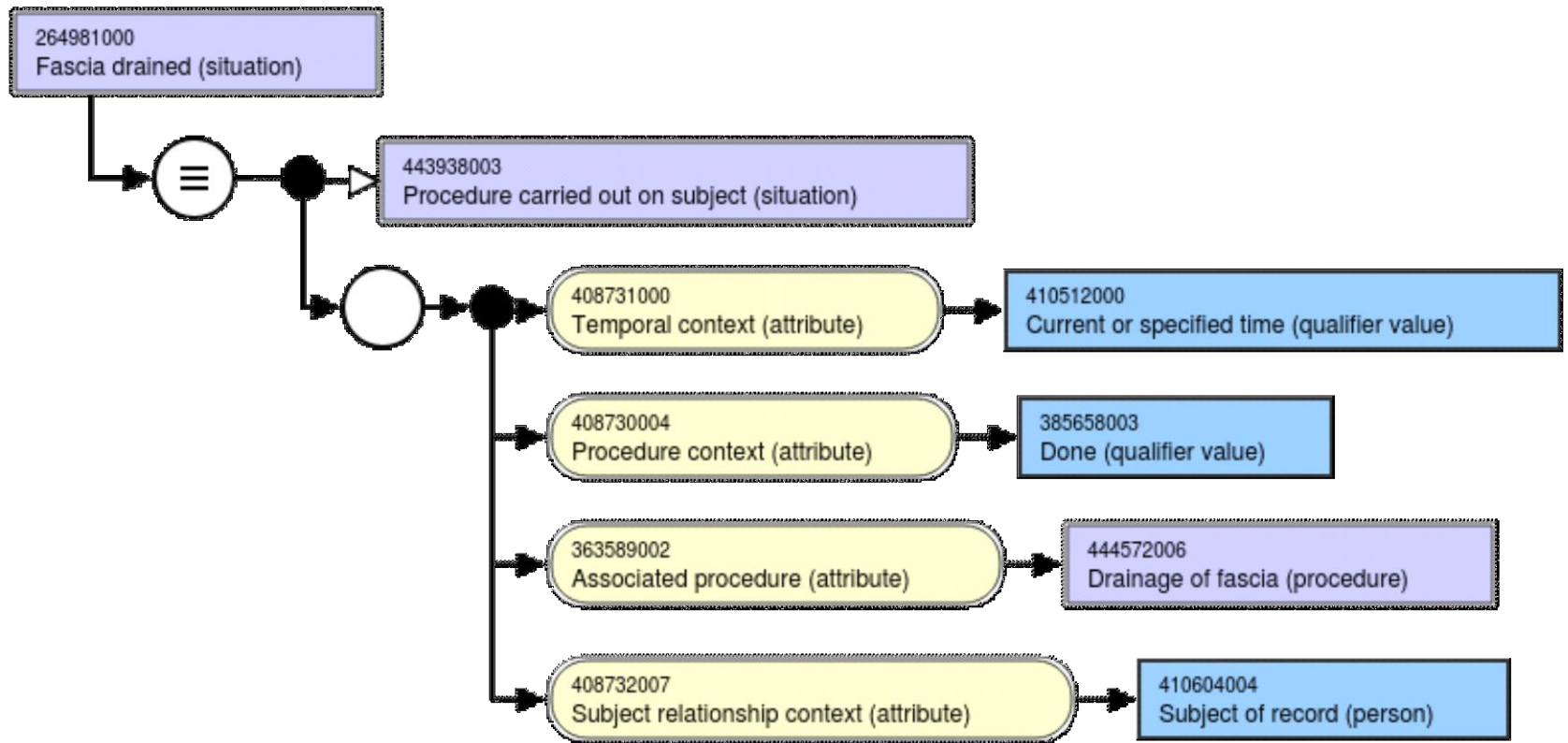
?

Pattern 13

Situ|ass_proc|Proc
Situ|pro_cont|QuVa
Situ|sub_reco|Pers
Situ|tem_cont|QuVa

Occurrences: 2112

Example



RG
Interpretation

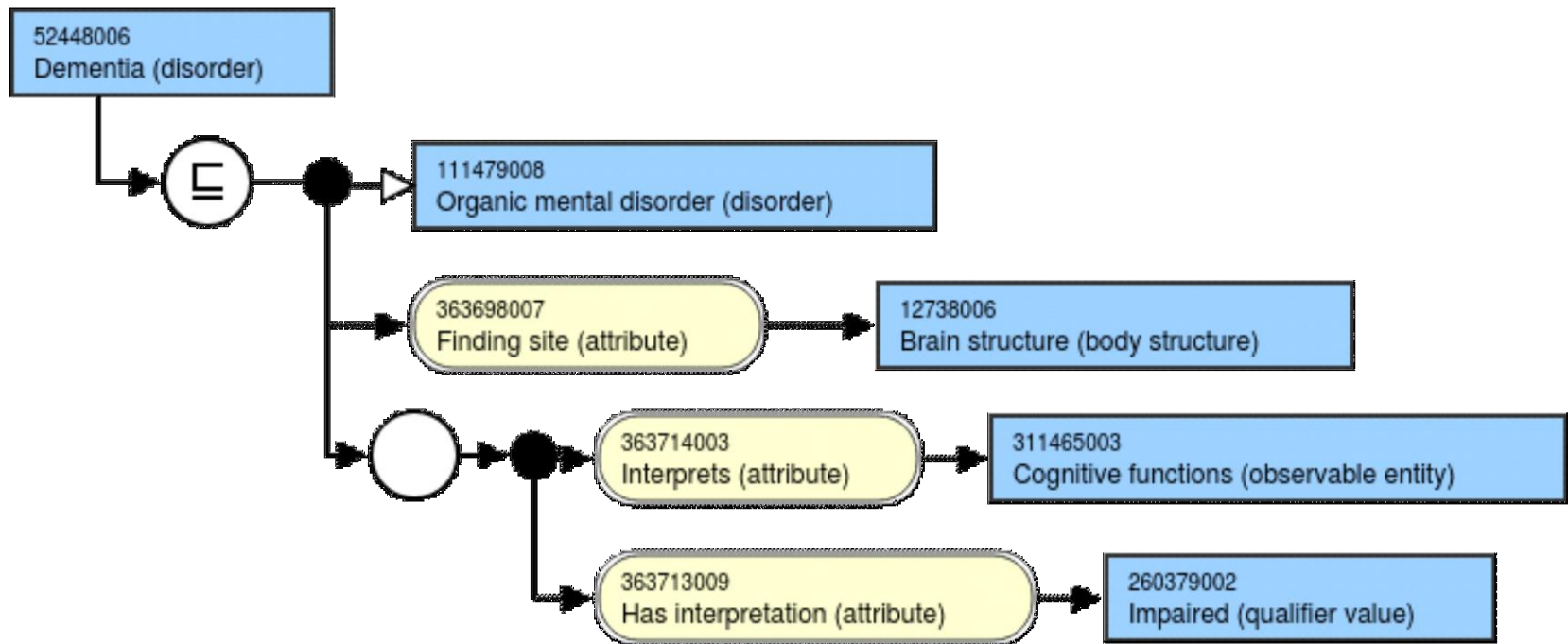
is outcome of ?

Pattern 14

Situ|ass_proc|Proc
Situ|pro_cont|QuVa
Situ|sub_reco|Pers
Situ|tem_cont|QuVa

Occurrences: 2112

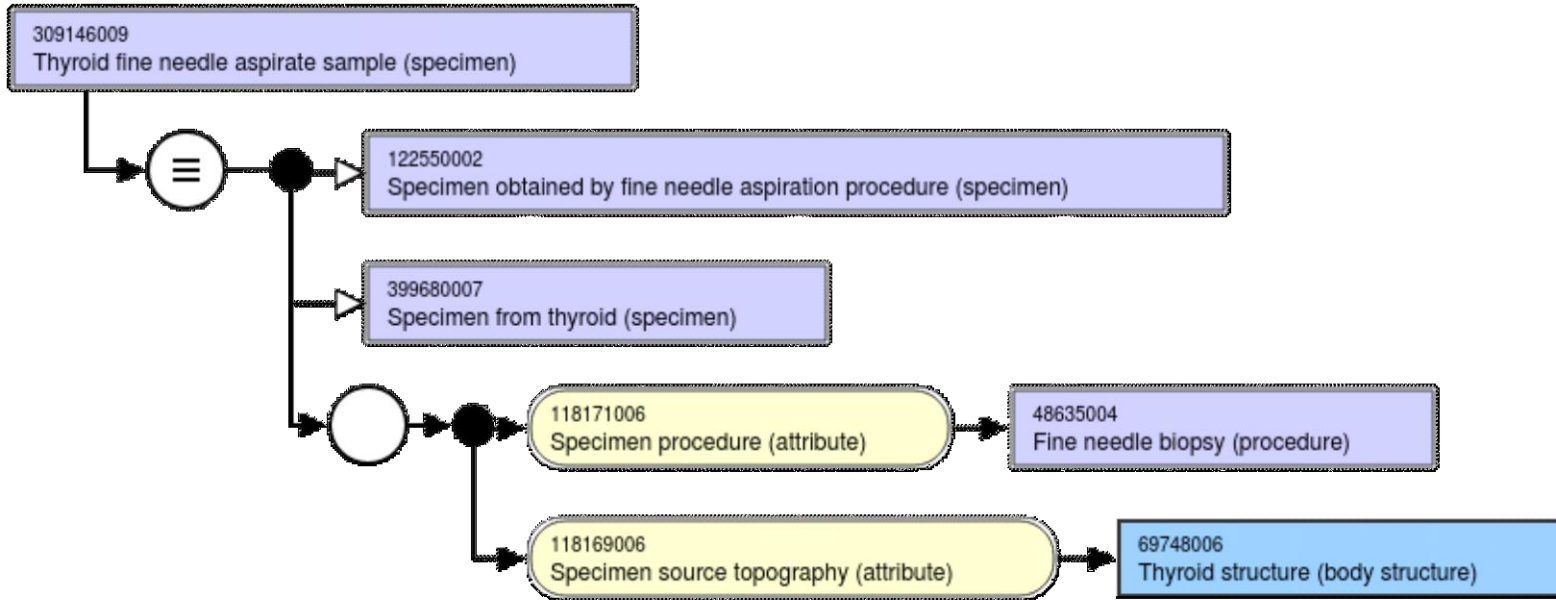
Example



RG
Interpretation

includes

Example



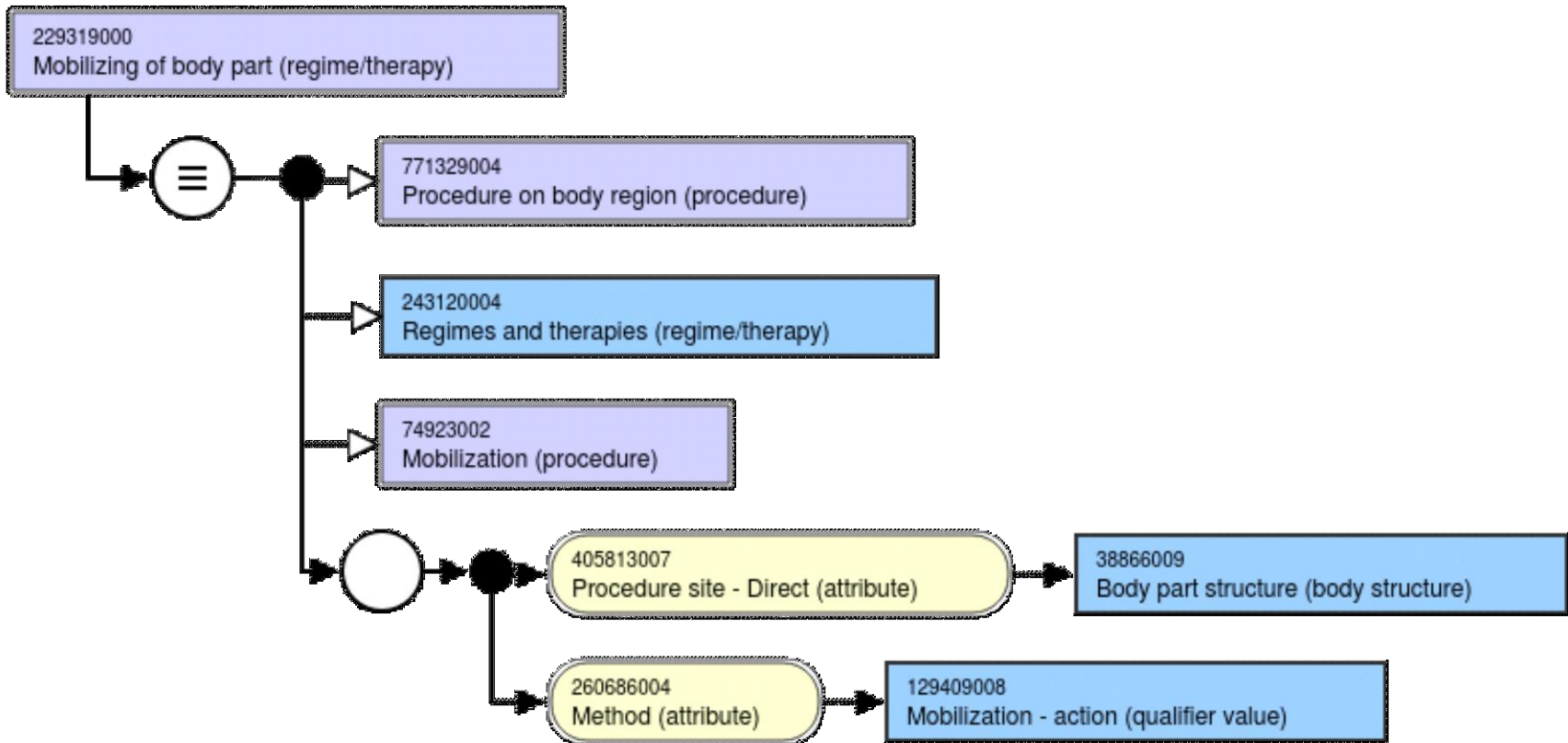
RG
Interpretation

includes

Comment

Parts of a possibly heterogeneous specimen.
At the right hand site a possible modelling pattern could be:
is_outcome_of some (Fine_needle_biopsy and has_participant some Thyroid_structure)

Example



RG
Interpretation

includes

The relation includes

- From BioTopLite2
- Most general spatiotemporal inclusion
- Transitive
- Reflexive

