

Concept Status: **current**

[-] *Descriptions*

[-] *Lang: en-US*

- [F] 517382016 **mapping**
- [P] 220309016 **local terminology**
- [S] 220308012 **to SNOMED-CT**
- [S] 2957222010 **for eHR**
- [S] 2959952016 **in Hong Kong**

[-] *Codes*

***SNOMED CT Implementation Showcase
October 2013***

48176007 social context

125676002 person

- 224627004 general categories of p
- 394619001 guardian
- 262043009 partner in relationship
- 438347000 person categorized by
- 410598002 person categorized by
- 428792000 person exposed to dis
- 303119007 person in the commun
- 303071001 person in the family
- 303118004 person in the healthca
- 444018008 person with characteri
- 419358007 subject of record or oth

48176007 social context

125676002 person

224627004 general categories of p

Concept Status: **current**

Descriptions

Lang: en-US

- 2466056014 Edward Tam (person)
- 2472258016 Edward Tam

Definition: Primitive

- 116680003 is a
 - 34009011 Health Informatics Analyst
- 363698007 finding site
 - 383541016 eHR Information Standards Office
- 363698007 finding site
 - 336202010 Hong Kong

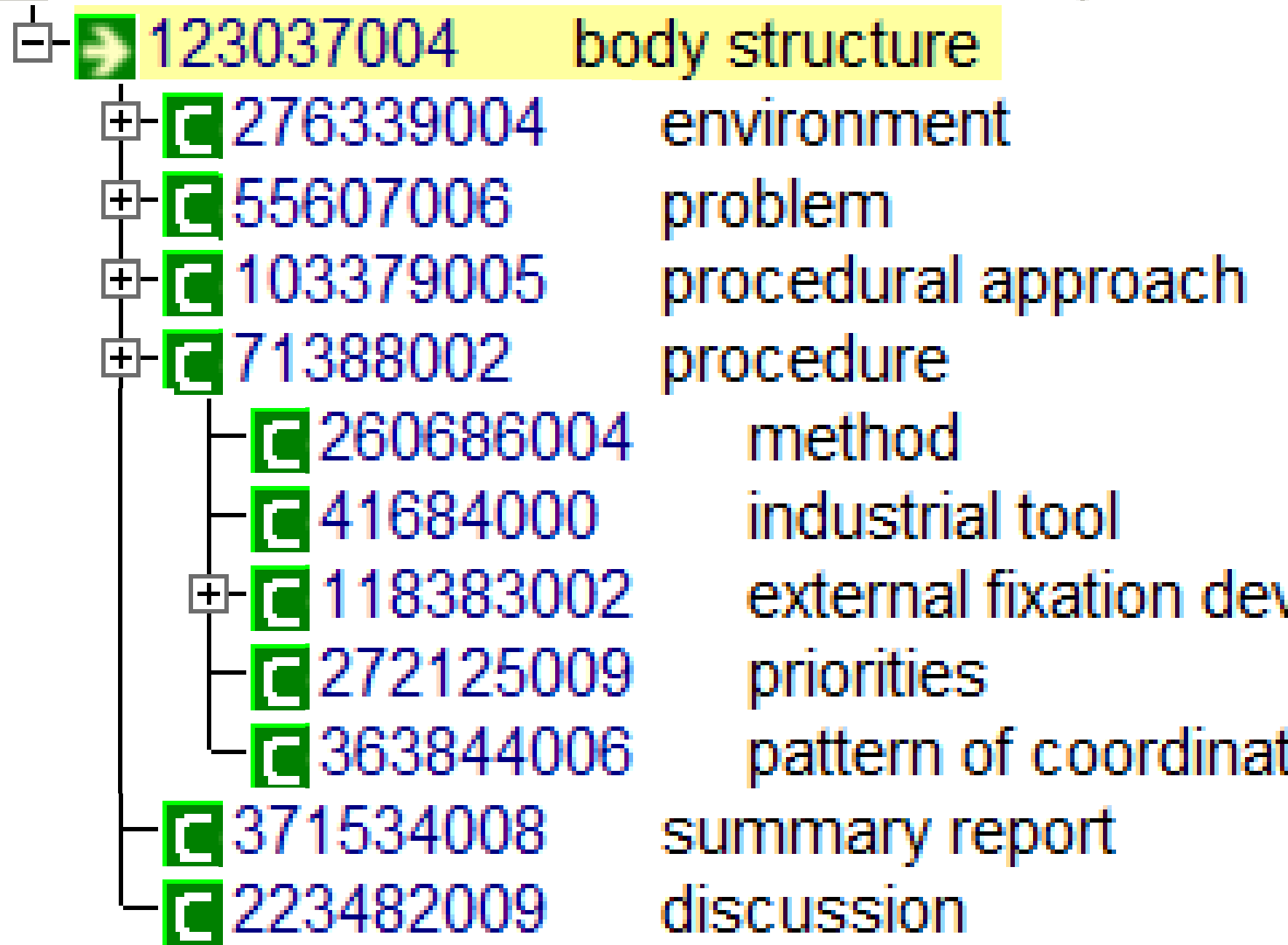
Codes

- Mail : edwardtam@ha.org.hk
- Phone : +852 3919 2205

[-] 138875005 SNOMED CT Concept

[-] → 123037004 body structure

- + 442083009 anatomical or acquired
- + 91832008 anatomical organization
- + 258331007 anatomical site notation
- + 118956008 morphologically altered
- 278001007 nonspecific site
- 361083003 normal anatomy
- + 91722005 physical anatomical entity
- 21229009 topography not assigned
- 87100004 topography unknown



308916002 environment or geographical

276339004 environment

- 285202004 community environment
- 288500009 geographical environment
- 285201006 hospital environment
- 440654001 inpatient environment
- 440655000 outpatient environment
- 285128009 personal environment
- 224777007 physical environment
- 257557008 place
- 277866000 place descriptors
- 43741000 site of care

| | |
|-----------|-----------------------------|
| 308916002 | environment or geographical |
| 276339004 | environment |
| 285202004 | community environme |

- **electronic Health Record (eHR) sharing system**
 - project by Hong Kong SAR government
 - territory-wide health record sharing platform
 - both public & private health care providers
 - live-run expected at end of 2014
 - **need an information standard** for data consistency

| | |
|-----------|-----------------------------|
| 308916002 | environment or geographical |
| 276339004 | environment |
| 285202004 | community environme |

- **Hong Kong Clinical Terminology Table (HKCTT)**
 - information standard for eHR sharing system
 - based on Hospital Authority Clinical Vocabulary (HACVT)
 - accumulated 39700 diagnosis & procedure concepts
 - **how to link with SNOMED-CT for interoperability?**



138875005

SNOMED CT Concept



123037004

body structure



404684003

clinical finding



308916002

environment or geographical



272379006

event



106237007

linkage concept



363787002

observable entity



410607006

organism



373873005

pharmaceutical / biologic



78621006

physical force



260787004

physical object



71388002

procedure



362981000

qualifier value



410001000

qualifier value

| | | | | |
|-----|-----|-----------|-------------------|------------------|
| [-] | → | 138875005 | SNOMED CT Concept | |
| | [+] | [-] | 123037004 | body structure |
| | [+] | [-] | 404684003 | clinical finding |

- ideal for eHR use:
 - comprehensive collection of concepts
 - varied levels of granularity

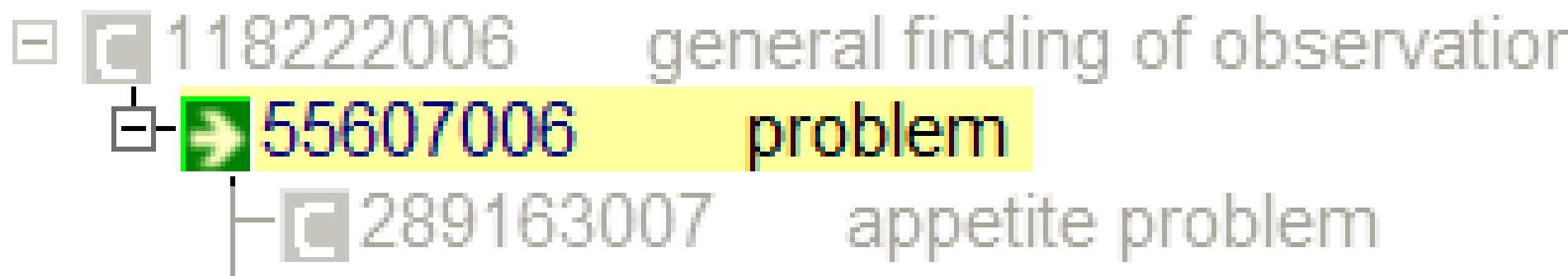
| | | | | |
|-----|-----|-----------|-------------------|------------------|
| [-] | [→] | 138875005 | SNOMED CT Concept | |
| | [+] | [☐] | 123037004 | body structure |
| | [+] | [☐] | 404684003 | clinical finding |

- efficient concept searching during info capture
 - synonyms
 - multi-hierarchy relationships
 - definition with attributes

| | | | | |
|-----|---|-----------|-------------------|------------------|
| [-] | → | 138875005 | SNOMED CT Concept | |
| | + | [-] | 123037004 | body structure |
| | + | [-] | 404684003 | clinical finding |

- easy customisation
 - post-coordination
 - easy extension of terminology, while
 - preserving semantic hierarchy
 - good for information retrieval and data analysis

| | | |
|-----|-----------------|--------------------------------|
| [-] | 118222006 | general finding of observation |
| [-] | 55607006 | problem |
| | 289163007 | appetite problem |
| [+] | 50829006 | basic learning problem |
| | 302301000 | bladder problem |
| | 301329004 | body growth problem |
| | 301342004 | body odour problem |
| [+] | 105722002 | body weight AND/OR g |
| | 290085007 | breast problem |
| | 301181009 | cardiovascular system |
| [+] | 300439004 | gastrointestinal tract pr |
| | 405494009 | problem identified with |
| | 413321002 | problem manageable |
| | 410000000 | |

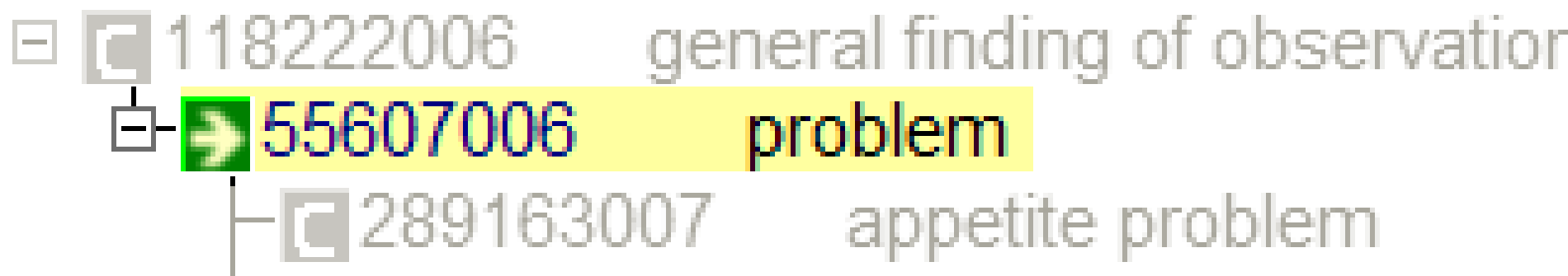


- **HACVT → HKCTT**

- during the last two decades, accumulated:

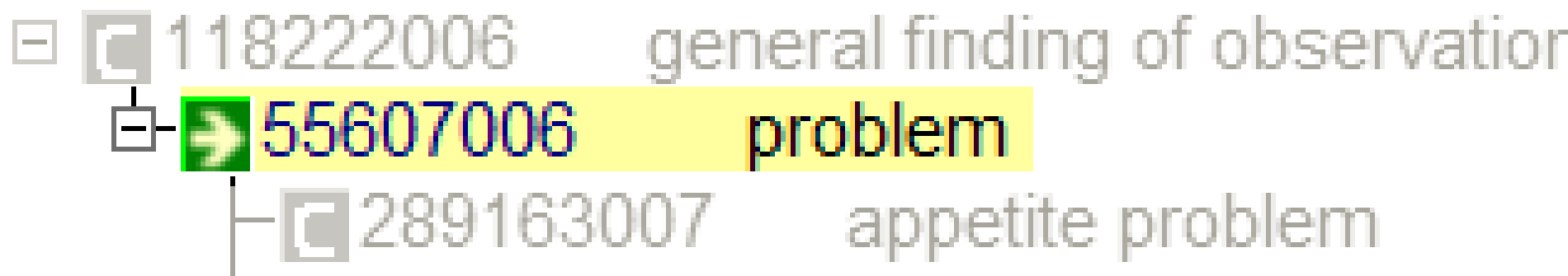
- 55M diagnosis entries
- 20M procedure entries

- to ensure backward compatibility



- **→ SNOMED CT**

- to enable use of SNOMED-CT by health care providers for capturing clinical records and transmitting to eHR
- to enable use of SNOMED-CT for analysis of eHR records



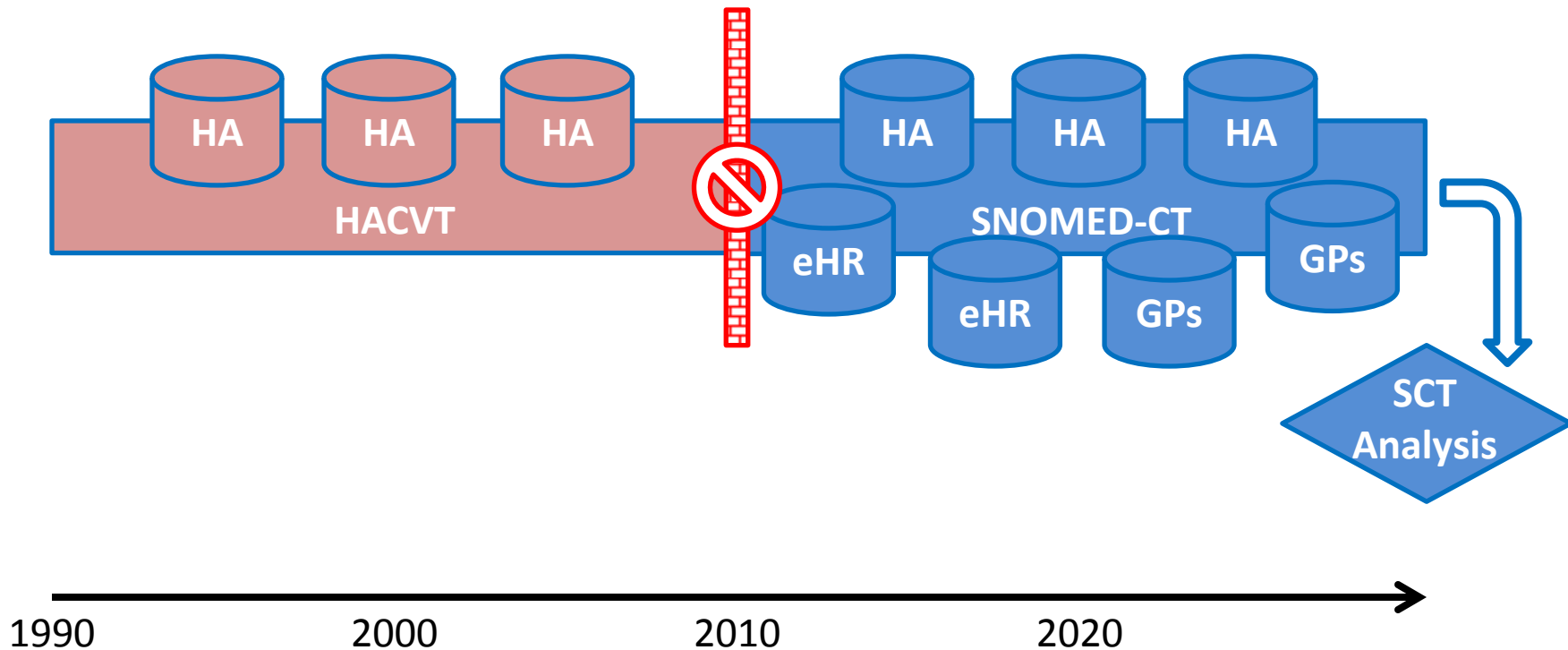
- **HKCTT vs SNOMED CT**

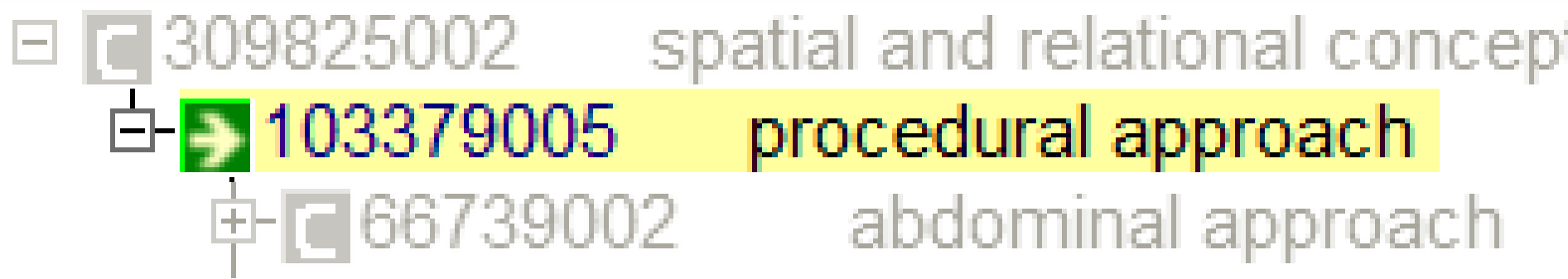
- direct implementation of SNOMED-CT ?
- mapping HKCTT to SNOMED-CT ?

| | | |
|-----|------------------|---------------------------------|
| [-] | 309825002 | spatial and relational concepts |
| [-] | 103379005 | procedural approach |
| [+] | 66739002 | abdominal approach |
| | 83037006 | anterior approach |
| | 431318001 | antero-latero-vertical approach |
| | 431319009 | anterovertical approach |
| [+] | 304154008 | approach to joint |
| [+] | 272495007 | approaches via device |
| [+] | 311818004 | approaches via surgical |
| | 416896004 | axillary approach |
| | 431195005 | bicoronal approach |
| [+] | 311995003 | cardiac approach |
| | 431317006 | coronal approach |
| | 401000000 | cutaneous approach |

- 309825002 spatial and relational concepts
- 103379005 procedural approach
- 66739002 abdominal approach

- directly implement SNOMED-CT :



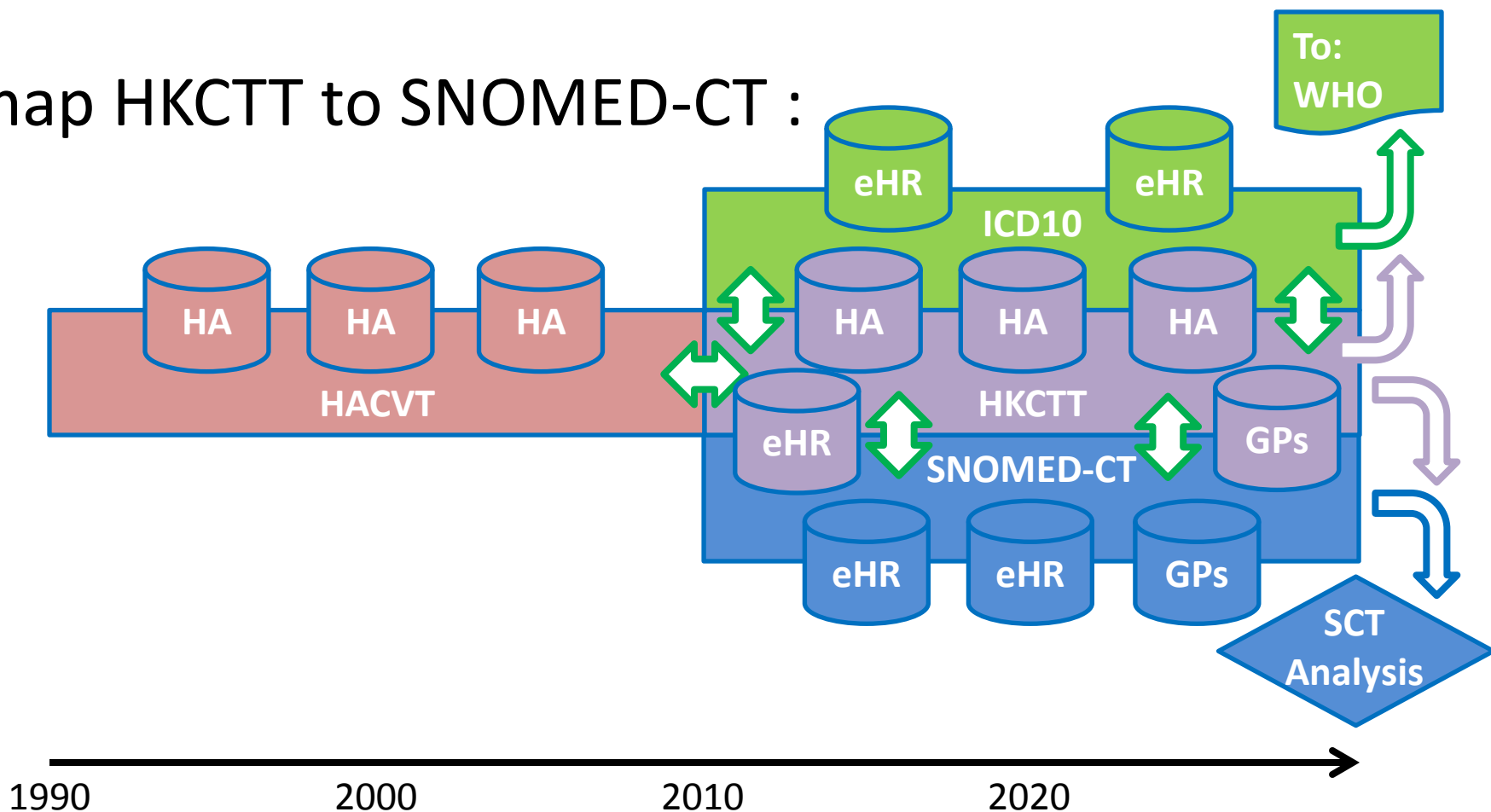


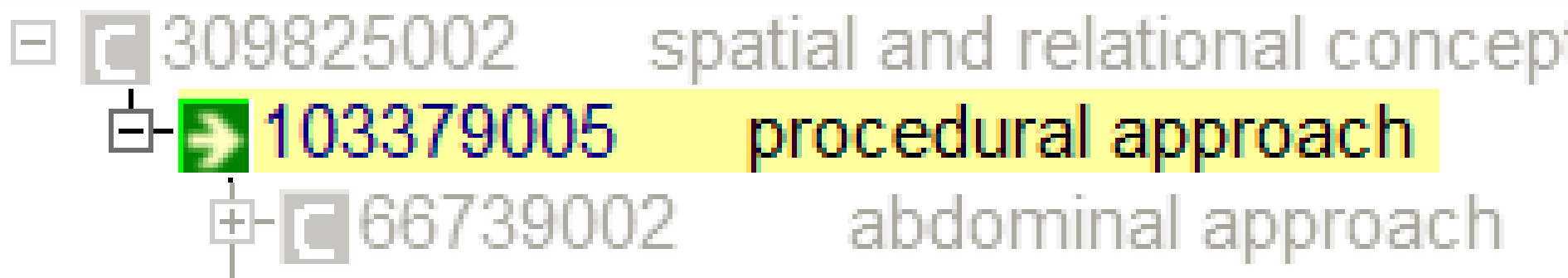
- directly implement SNOMED-CT :

- need to change working practice & culture !!
- need data conversion for existing data !!

- 309825002 spatial and relational concepts
- 103379005 procedural approach
- 66739002 abdominal approach

map HKCTT to SNOMED-CT :





- map HKCTT to SNOMED-CT :

- preserve working practice & culture

- preserve existing data, need no data conversion

- allowing data capture & analysis using SNOMED-CT

→ best of both worlds

[-] [] 362981000 qualifier value

[-] [] → 308910008 reference documentation

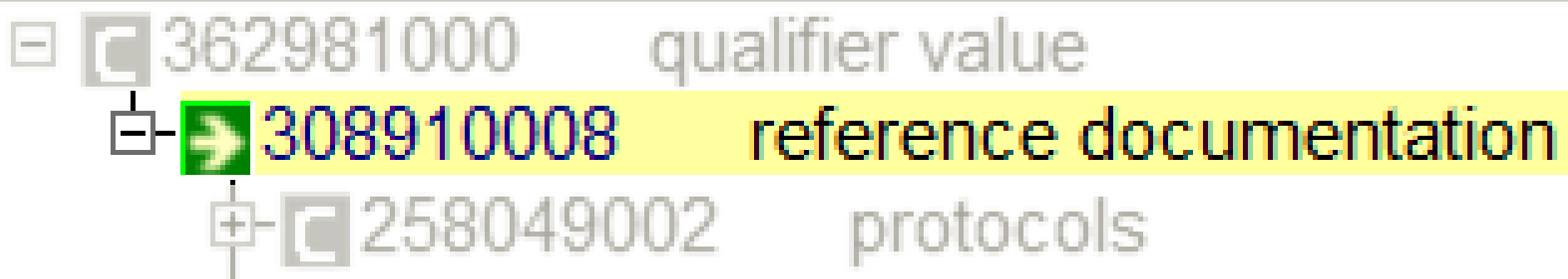
[+] [] 258049002 protocols

[+] [] 229053005 registers

| | | | |
|---|---|-----------|-------------------------|
| ☐ | ☐ | 362981000 | qualifier value |
| ☐ | ➔ | 308910008 | reference documentation |
| | ☐ | 258049002 | protocols |

- **basic mapping concepts**

- source
- target
- relationships
 - degree of equivalence
 - cardinality of the map



- degree of equivalence

- exact match / equivalent match
- approximate match
- no match

| | |
|---|-------------|
| 1 | Exact match |
| 2 | |
| 3 | |
| 4 | |
| 5 | No match |

| | | | |
|---|---|-----------|-------------------------|
| ☰ | ☐ | 362981000 | qualifier value |
| ☐ | ➔ | 308910008 | reference documentation |
| | ☐ | 258049002 | protocols |

- cardinality of the map
 - **one to one**
 - one to many
 - many to one
 - many to many

| | | | |
|---|---|-----------|-------------------------|
| ☐ | ☐ | 362981000 | qualifier value |
| ☐ | ➔ | 308910008 | reference documentation |
| | ☐ | 258049002 | protocols |

- **mapping principles**

- purpose

- rules and guidelines

- standards-based

- **authoritative support**
- **validation**

- map maintenance

- organization in charge
- update with source and targets

| | | | |
|---|---|-----------|-------------------------|
| ☐ | ☐ | 362981000 | qualifier value |
| ☐ | ➔ | 308910008 | reference documentation |
| | ☐ | 258049002 | protocols |

- **mapping steps**

- develop business case / define use case
- develop rules
- plan pilot phase
- develop full content
 - periodic testing, final QA testing
 - communicate with source / target owners
- **validation**

| | | | |
|---|---|-----------|-------------------------|
| ☐ | ☐ | 362981000 | qualifier value |
| ☐ | ➔ | 308910008 | reference documentation |
| | ☐ | 258049002 | protocols |

- validation

- **understandable, reproducible, usable**

- map understood by user without manual
- map developed by process straightforward and reproducible no matter who or what to perform the mapping
- map usable for use case

- **external validation**

- conducted by entity not involved with development or financial or political interest

[-] 138875005 SNOMED CT Concept

[-] → 71388002 procedure

- + 14734007 administrative procedure
- + 59524001 blood bank procedure
- + 389067005 community health procedure
- + 442006003 determination of information
- + 225288009 environmental care procedure
- 7922000 general treatment
- + 108252007 laboratory procedure
- + 371572003 nuclear medicine procedure
- + 386637004 obstetric procedure
- 371883000 outpatient procedure
- + 308335008 patient encounter procedure
- 300705004 procedure

| | | | |
|-----|-----|-----------|------------------------|
| [-] | [] | 138875005 | SNOMED CT Concept |
| [-] | → | 71388002 | procedure |
| [+] | [] | 14734007 | administrative procedu |

- mapping proceeded in **phases**:
 - exact matching
 - post-coordination
- **verification** to ensure quality

71388002 procedure

128927009 procedure by method

- 265572009 abdominoperineal sus
- 416118004 administration
- 233419004 application of direct pre
- + 119265000 assisting
- + 231361000 attention to catheter
- + 450335000 attention to cerebrover
- 265316002 attention to cochlear pr
- + 392446004 attention to device, ana
- + 235444009 attention to gastrointes
- 428619000 attention to hearing imp
- 429383008 attention to hearing imp
- 470004004 attention to iliofemora

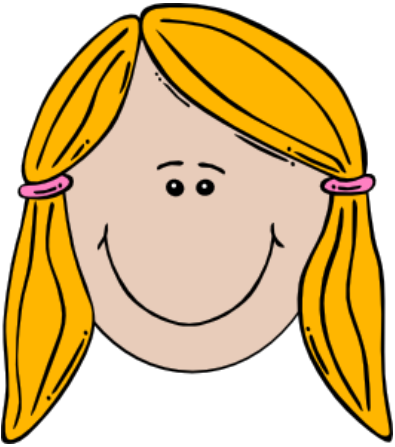
410662002 concept model attribute
└─> 260686004 method

- exact matching
 - compare **descriptive meanings** between concepts in HKCTT and SNOMED-CT
 - ignore word form differences like spelling & grammar

→ 260686004 method

• exact matching

- reviewers with clinical knowledge background
- **double-checked** by second reviewer



(HA 7453) Deafness of one ear

=

(SCT 162342008) Unilateral deafness

?



☐ 410662002 concept model attribute
└─ → 260686004 method

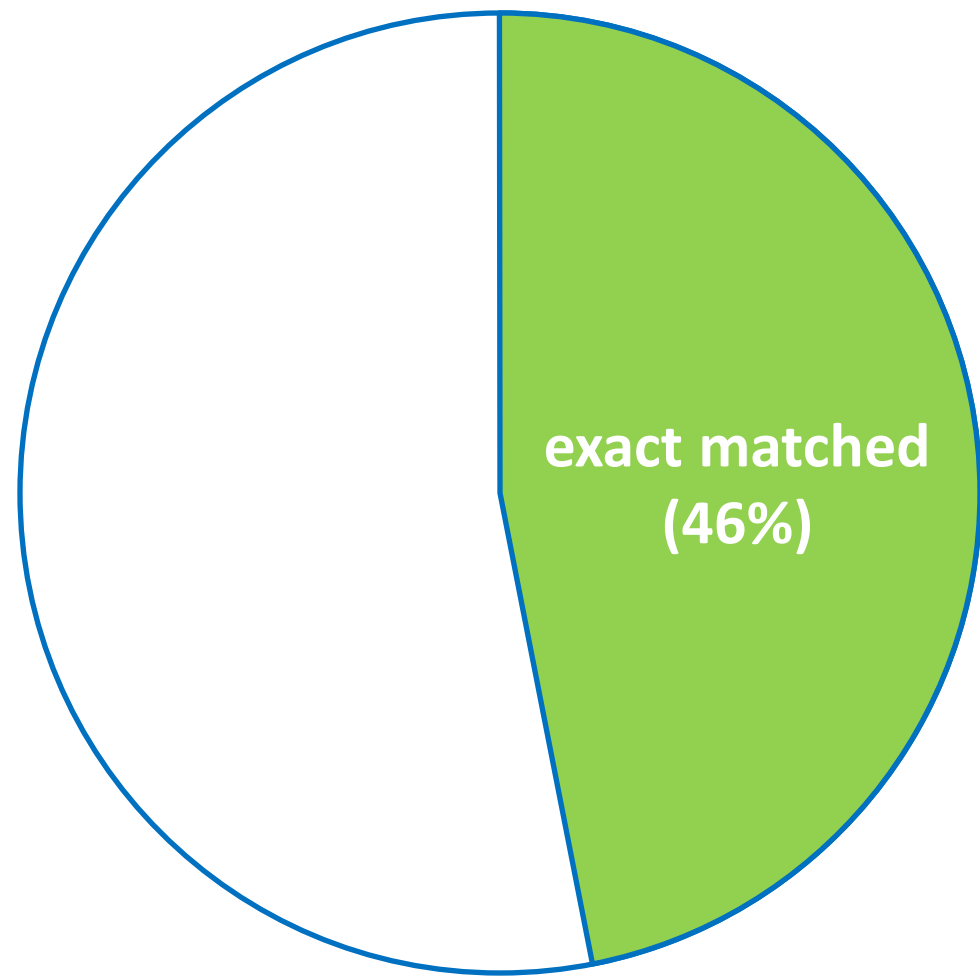
- exact matching
 - 46% (18600) concepts exact matched

410662002

concept model attribute

→ 260686004

method



[-] [] 49062001 device

[-] [] → 41684000 industrial tool

- [] 64565002 air tool
- [] 84546002 barricade
- [] 74884005 boatswain's chair
- [] 9883003 cargo handling gear
- [+] [] 46666003 chain
- [+] [] 59160002 Chipguard
- [] 79401009 chute
- [] 16417001 commercial breathing
- [] 84599008 detonating cord
- [] 86816008 diving ladder
- [] 71483007 diving stage
- [] 00000005



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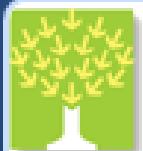
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- [Lexical Tools](#)**
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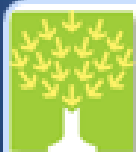
The SPECIALIST Lexicon

The SPECIALIST Lexicon is an English lexicon (dictionary) that occurring English words. The lexical entry for each word or term

- Syntactic (syntax information)
- Morphological (inflection, derivation, and composition information)
- Orthographic (spelling information)

Currently the SPECIALIST Lexicon contains over 200,000 terms from the English Language Processing. Words are selected for entry into the Sp

- The UMLS Test Collection of MEDLINE abstracts

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[Overview](#)[Metathesaurus](#)[Semantic Network](#)[Lexical Tools](#)[Lexical Entries](#)[The Lexical Tools](#)[Lexical variant
Generation \(LVG\)](#)[The Norm Program](#)[The Word Index
Generator - Wordind](#)

The Lexical Tools

The lexical tools are a set of computer programs designed to address the high degree of variability often found in biomedical text. The primary programs are:

- A lexical variant generator (LVG)
- A normalized string generator (Norm)
- A word Index generator (Wordind)

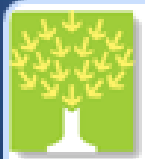
Together these programs address the high degree of variability often found in biomedical text. Words often have several inflected forms which would properly be considered as one concept. For example, the word "treat," for example, has three inflectional variants: "treats" the



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- Overview
- Metathesaurus
- Semantic Network
- Lexical Tools
 - Lexical Entries
 - The Lexical Tools
 - Lexical Variant Generation (LVG)
 - The Norm Program**
 - The word index
 - Generator - Wordind

The Norm Program

The lexical program, **Norm**, generates the normalized strings for the UMLS. The normalization process involves stripping possessives, replacing them with "No Other Specification" or NOS, lower-casing each word, and sorting the words in alphabetic order.

Below is an example of the normalization process for the term H

| | |
|--|------------------------|
| | |
| | Hodgkins diseases, NOS |
| | |

The Norm Program

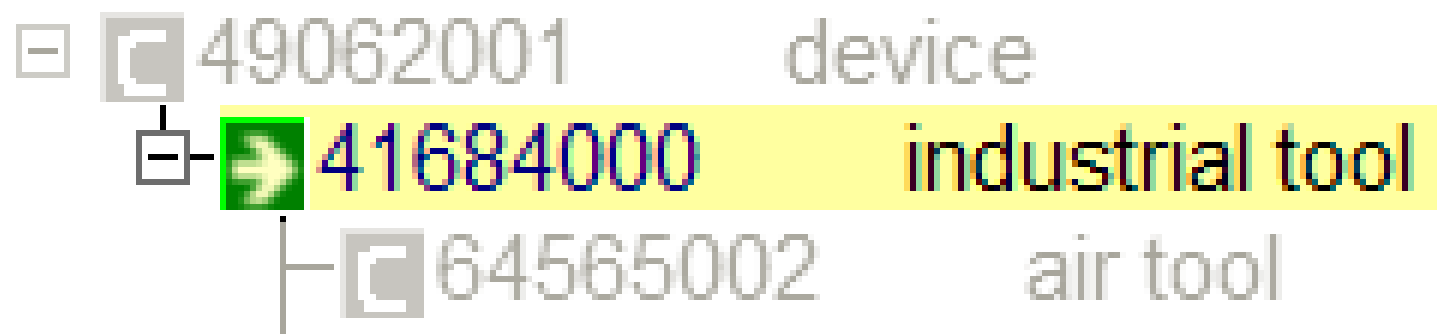
The lexical program, **Norm**, generates the normalized strings for terms included in the SN. The normalization process involves stripping possessives, replacing punctuation with spaces, such as "No Other Specification" or NOS, lower-casing each word, breaking a string into words, and sorting the words in alphabetic order.

Below is an example of the normalization process for the term Hodgkin's diseases, NOS.

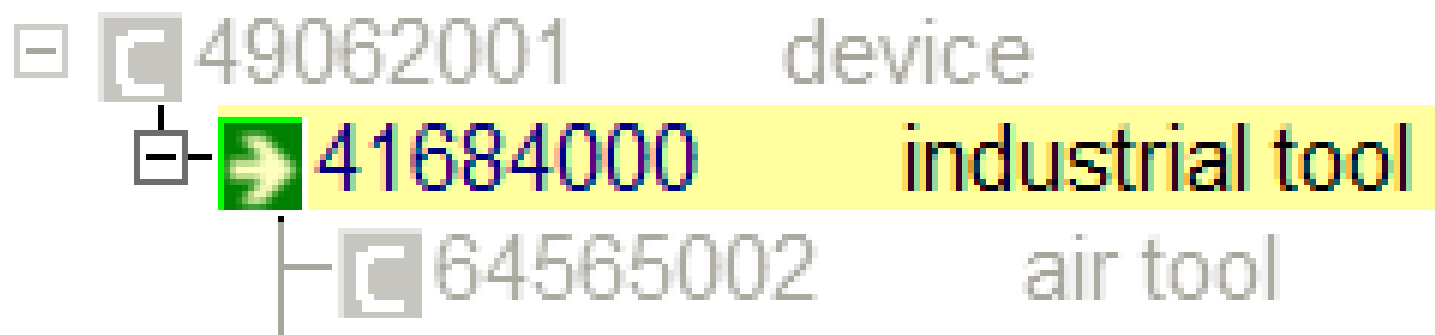
| | |
|-------------------|------------------------|
| | Hodgkins diseases, NOS |
| Remove genitive | Hodgkin diseases, NOS |
| Remove stop words | Hodgkin diseases, |
| Lowercase | hodgkin diseases, |
| Strip punctuation | hodgkin diseases |
| Uninflect | hodgkin disease |
| Sort words | disease hodgkin |

The Norm program is used in systems to:



- Find similar terms
- Map terms to UMLS concepts
- Find lexical variants for a term

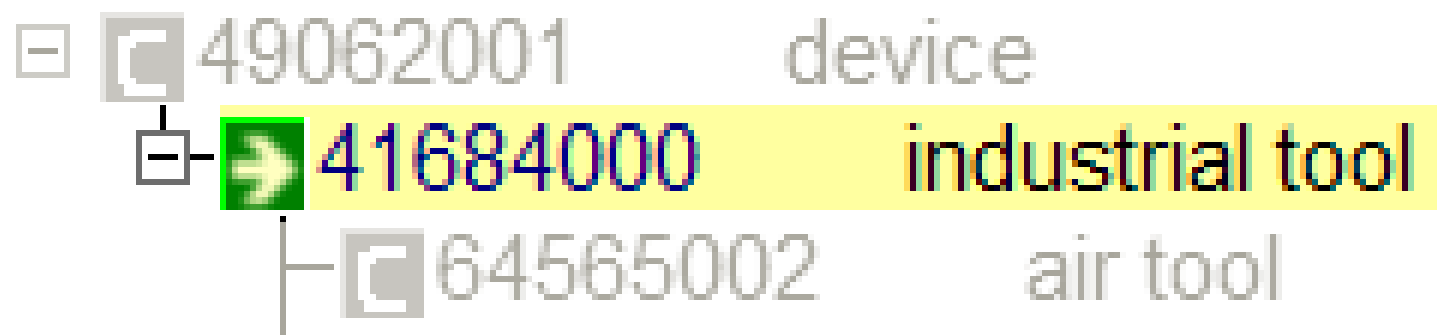


- exact match verification
 - the **NORM** program from the **Lexical Tools** from the Unified Medical Language System (UMLS)
 - **perform normalization** on exact matched concept pairs (HKCTT concept & SNOMED-CT concept)
 - compare the two normalized lexical forms, if the same, the concept pair is “exact matched”



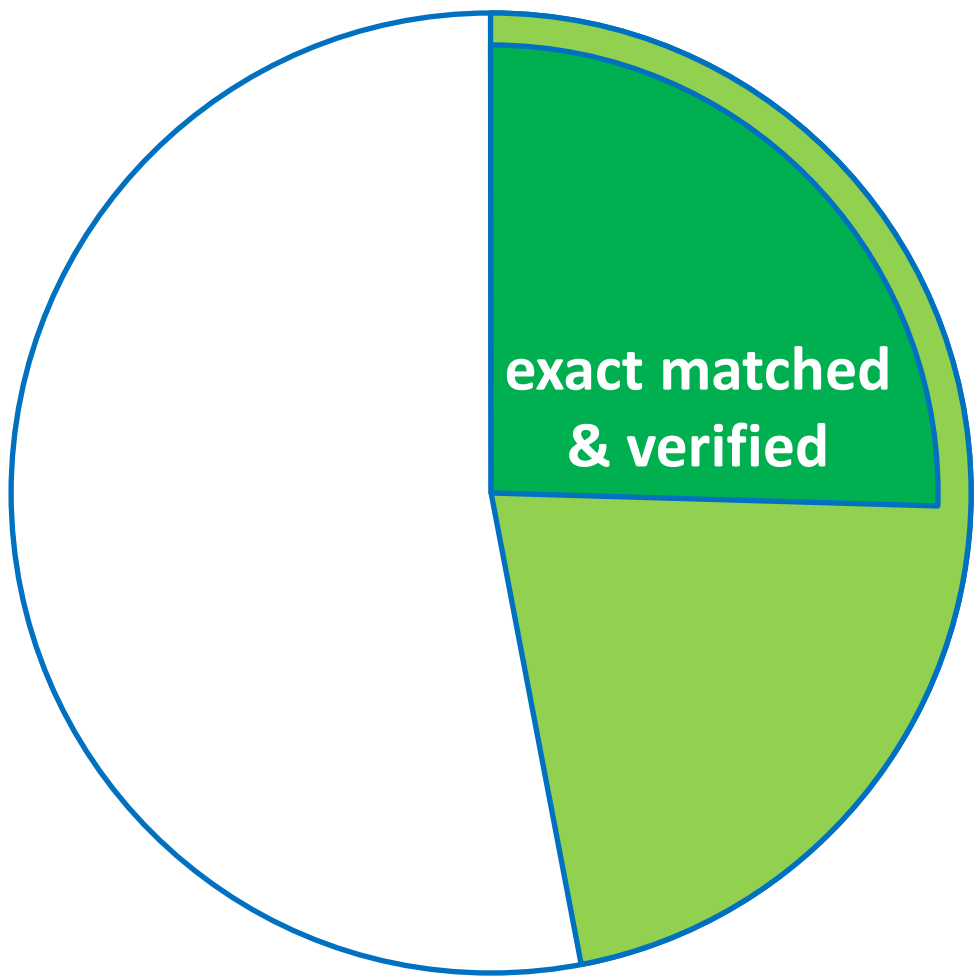
- exact match verification

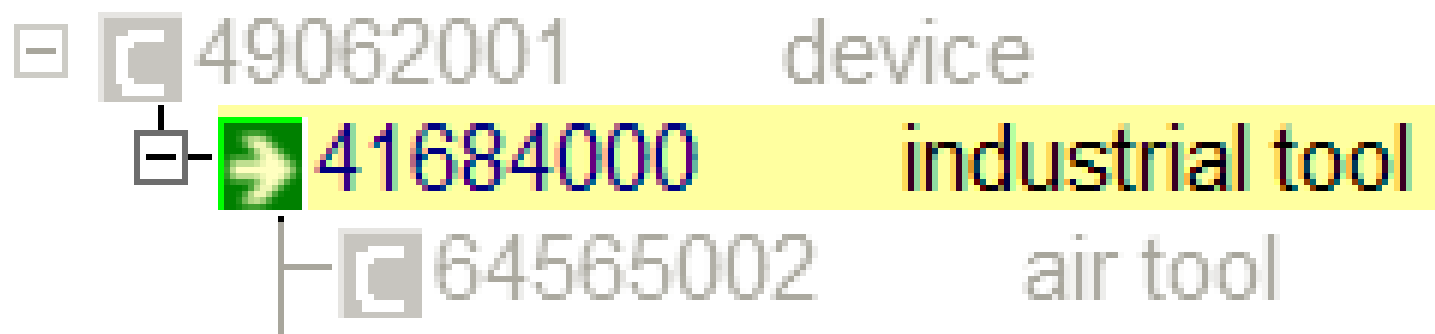
| NORM | (HA 15217) Macroductyia (finger) | (SCT 69381005) macroductyia of fingers |
|---|--|--|
| ⋮ no punctuations no stop words no upper case no plurals ⋮ | ⋮  Macroductyia finger Macroductyia finger macroductyia finger macroductyia finger ⋮ | ⋮  macroductyia of fingers macroductyia fingers macroductyia fingers macroductyia finger ⋮ |
| result = SAME | macroductyia finger | macroductyia finger |



- exact match verification
 - out of 18600 concepts pairs exact matched,
 - 55% (10100) have same normalized lexical forms

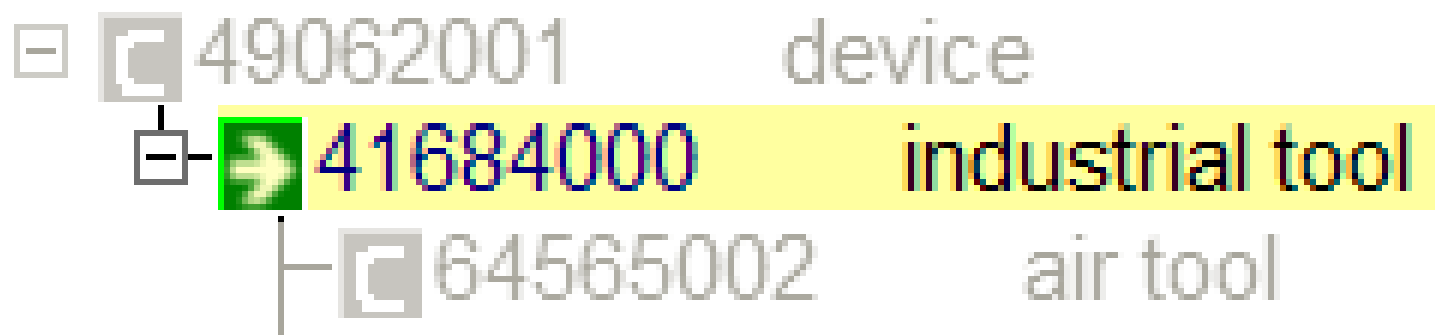
- [-] [] 49062001 device
 - [-] [] 41684000 industrial tool
 - [] [] 64565002 air tool





- exact matched but failed lexical verification:

| | |
|-------------------------------------|--|
| (HA 13806) Lumbar vertebral disease | (SCT 129139009) Disorder of lumbar spine |
| (HA 3494) Pigmented mole | (SCT 400096001) Melanocytic nevus |
| (HA 6130) Plexopathy | (SCT 2231001) Nerve plexus disorder |
| (HA 15325) Breast ectopic | (SCT 18166000) Accessory breast |
| (HA 37863) Hypoglossal pain | (SCT 279059006) Hypoglossal neuralgia |
| (HA 8296) Hypotension | (SCT 45007003) Low blood pressure |



- exact matched but failed lexical verification:

| | |
|--|--|
| (HA 31631) Ultrasonogram of kidney | (SCT 306005) Echography of kidney |
| (HA 33095) Control of haemorrhage in pharynx | (SCT 172982005) Hemostasis of pharynx |
| (HA 24692) Gastrectomy, partial | (SCT 49209004) Subtotal gastrectomy |
| (HA 23917) Chest tapping | (SCT 91602002) Thoracentesis |
| (HA 27315) Elbow fusion | (SCT 58494002) Arthrodesis of elbow |
| (HA 27879) Excision of Extra Finger | (SCT 90722001) Removal of supernumerary finger |

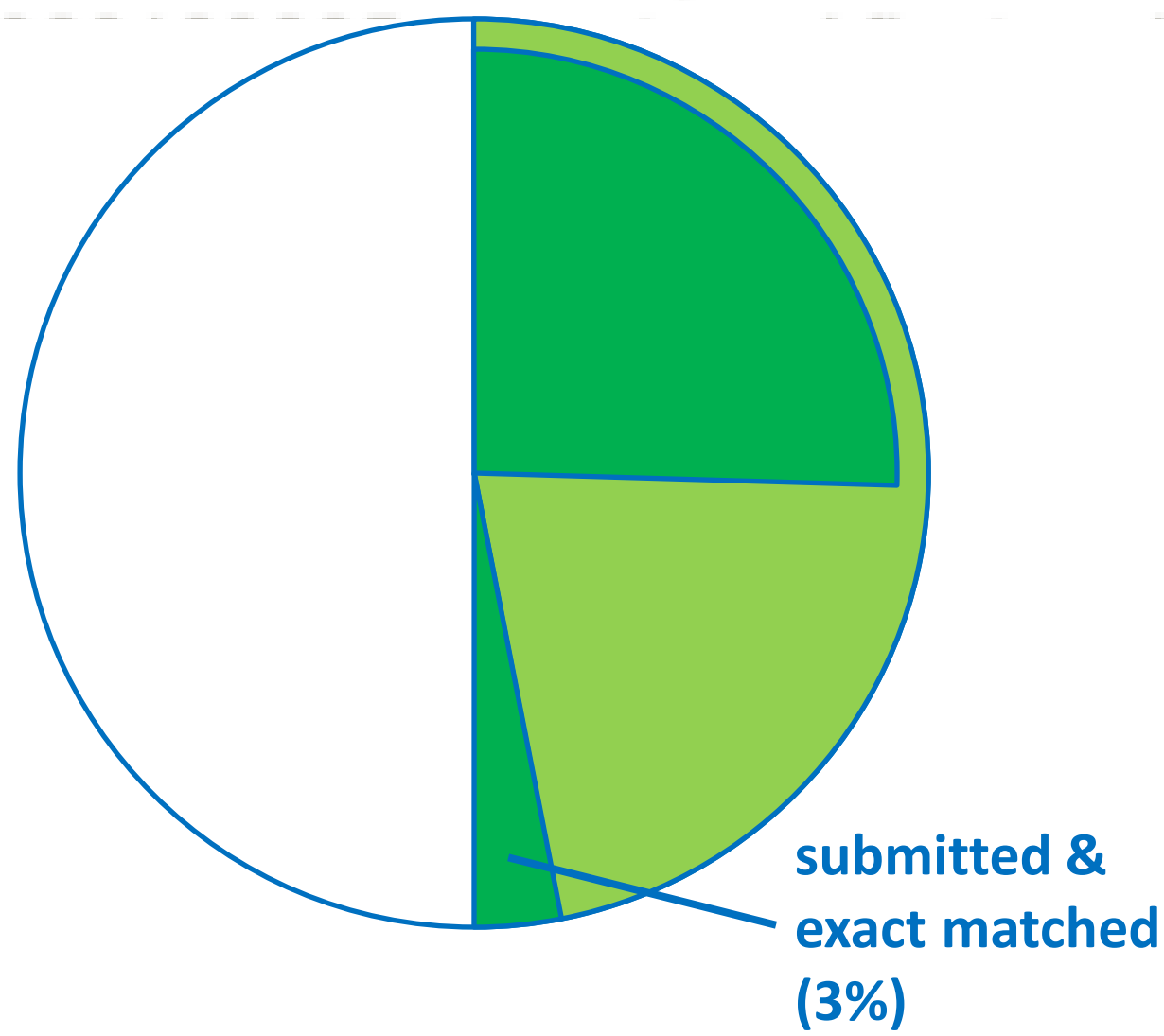
| | | | |
|-----|-----|-----------|--------------------------|
| [-] | [] | 261200006 | external fixation system |
| [-] | [] | 118383002 | external fixation device |
| | [] | 44056008 | caliper |

- submission to IHTSDO
 - concepts with no exact match (SNOMED-CT)
 - submit to International Health Terminology Standards Development Organisation (IHTSDO) **for addition to the SNOMED-CT international core release**

| | | | |
|-----|-----|-----------|--------------------------|
| [-] | [] | 261200006 | external fixation system |
| [-] | [] | 118383002 | external fixation device |
| | [] | 44056008 | caliper |

- submission to IHTSDO
 - 12% (4800) concepts submitted to IHTSDO
 - 3% (1100) concepts **added to SNOMED-CT core**
 - becomes exact match

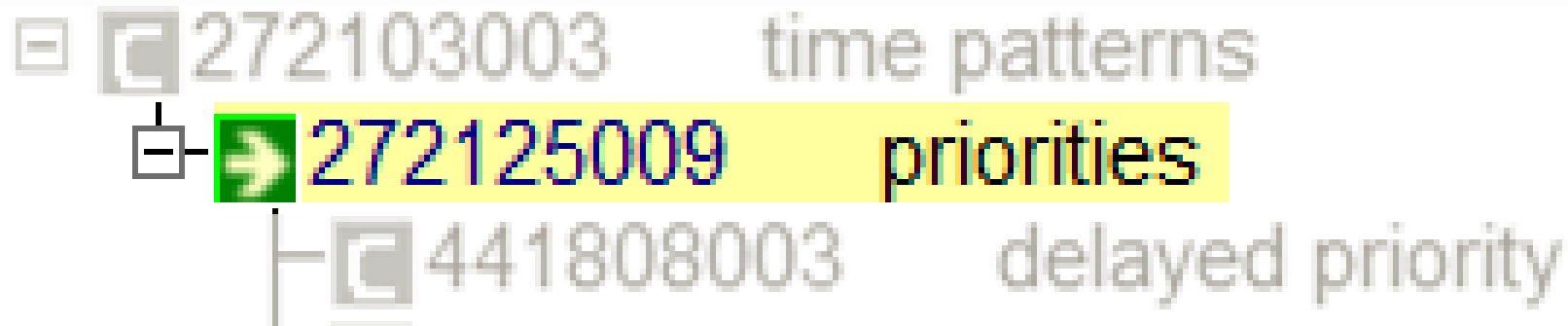
261200006 external fixation system
118383002 external fixation device
44056008 caliper



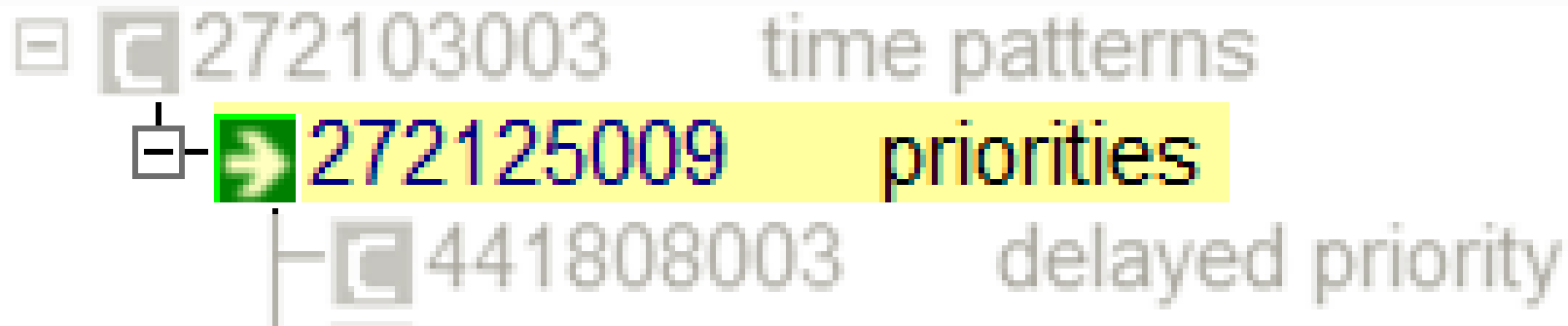
272103003 time patterns

272125009 priorities

- 441808003 delayed priority
- 103390000 elective
- 25876001 emergency
- 394849002 high priority
- 88694003 immediate
- 394848005 normal priority
- 76561005 reclassified
- 44408006 reclassified and rescheduled
- 64695001 repeat elective
- 21282002 repeat emergency
- 58334001 rescheduled
- 50044004 routine



- priority concept groups
 - concepts in low usage / no usage
 - concepts with special status (inactive, etc)

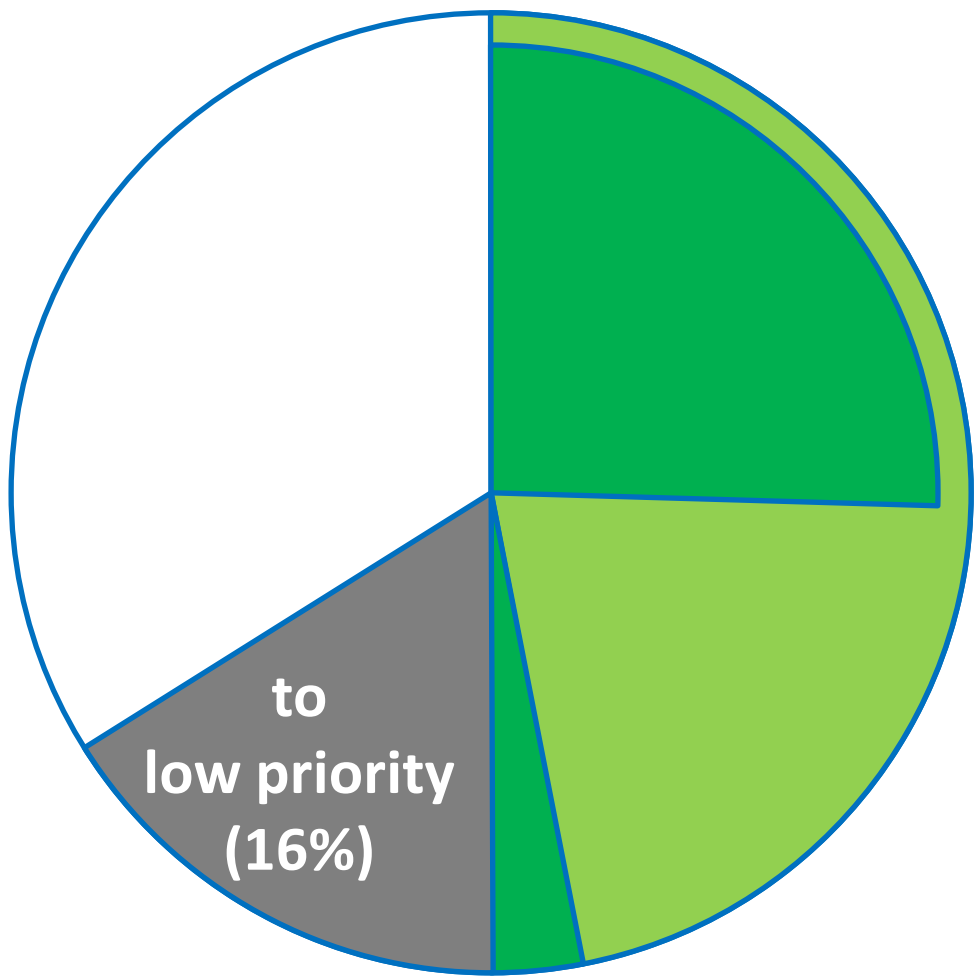


- priority concept groups
 - 16% (6600) concepts to lower priority mapping plan

272103003 time patterns

272125009 priorities

441808003 delayed priority



☐ 410662002 concept model attribute
└─> 260686004 method

- post-coordination

- concepts with no exact match (SNOMED-CT)
- represent the concept using SNOMED-CT concepts
- follow SNOMED-CT editorial guidelines

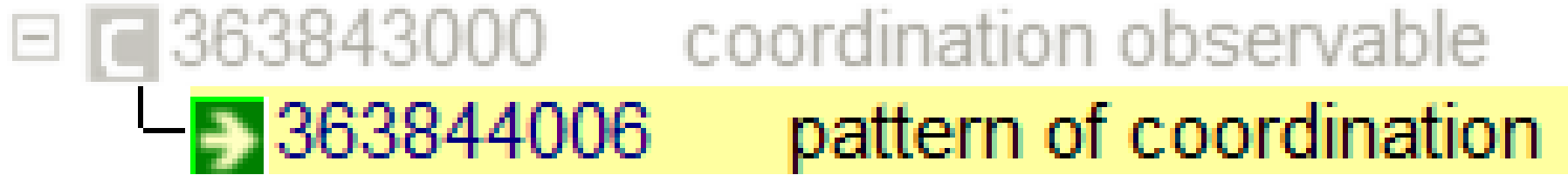
[-] 138875005 SNOMED CT Concept

[-] → 363787002 observable entity

- + 105727008 age AND/OR growth p
- + 364684009 body product observab
- + 363788007 clinical history/examina
- + 408699006 device observable
- + 441870009 disease activity score
- + 363819003 drug therapy observab
- + 438950009 environment observabl
- + 414237002 feature of entity
- + 246464006 function
- + 278844005 general clinical state
- + 364709006 hematology observable
- + 400004000 id... (5)...

☐ 363843000 coordination observable
└─▶ 363844006 pattern of coordination

- post-coordination mapping patterns
 - found **common patterns** among post-co mappings



- post-coordination

| | | |
|---------------|-----------------|-------------------------------|
| mild cystitis | is a | cystitis (disorder) |
| | severity | mild (qualifier value) |

| | | |
|-------------------------|-----------------|--|
| severe aplastic anaemia | is a | aplastic anemia (disorder) |
| | severity | severe (severity modifier) (qualifier value) |



- post-coordination mapping patterns

| | |
|-------------|---|
| mild Dx | is a = Dx severity = mild (qualifier value) |
| moderate Dx | is a = Dx severity = moderate (severity modifier) (qualifier value) |
| severe Dx | is a = Dx severity = severe (severity modifier) (qualifier value) |



- post-coordination



| | | |
|---------------------------|------------------------|---|
| acute alcoholic psychosis | is a | alcohol-induced psychosis (disorder) |
| | clinical course | sudden onset and/or short duration (qualifier value) |

| | | |
|-----------------------------|------------------------|----------------------------------|
| chronic adjustment disorder | is a | adjustment disorder (disorder) |
| | clinical course | chronic (qualifier value) |



- post-coordination mapping patterns

| | |
|------------|---|
| acute Dx | is a = Dx clinical course = sudden onset AND/OR short duration (qualifier value) |
| chronic Dx | is a = Dx clinical course = chronic (qualifier value) |

 363843000 coordination observable
 363844006 pattern of coordination

- post-coordination

| | | |
|---------------------------|---------------|---|
| open trigeminal rhizotomy | is a | trigeminal rhizotomy (procedure) |
| | access | open approach - access (qualifier value) |

| | | |
|-------------------------------------|---------------|---|
| percutaneous cardiopulmonary bypass | is a | cardiopulmonary bypass operation (procedure) |
| | access | percutaneous approach - access (qualifier value) |



- post-coordination mapping patterns

| | |
|-----------------|---|
| open Px | is a = Px access = open approach - access (qualifier value) |
| closed Px | is a = Px access = closed approach - access (qualifier value) |
| percutaneous px | is a = px access = percutaneous approach - access (qualifier value) |



- post-coordination

| | | |
|------------------------------------|--------------------------|---|
| transurethral resection of bladder | is a | resection of lesion of bladder (procedure) |
| | surgical approach | transurethral approach (qualifier value) |

☐ 363843000 coordination observable
└─> 363844006 pattern of coordination

- post-coordination mapping patterns

| | |
|--------------|---|
| trans-xxx Px | is a = Px surgical approach = trans-xxx |
|--------------|---|



- post-coordination

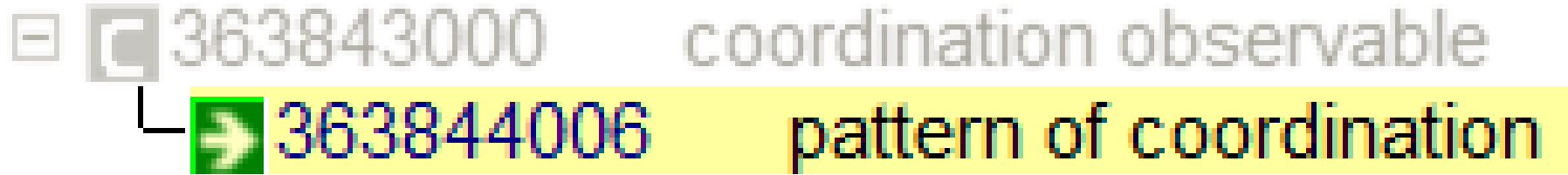
| | | |
|-----------------------|--------------|--------------------------------|
| post infarct dementia | is a | dementia (disorder) |
| | after | cerebral infarction (disorder) |

| | | |
|------------------------------------|--------------|--------------------------------|
| aseptic meningitis, post-operative | is a | aseptic meningitis (disorder) |
| | after | surgical procedure (procedure) |

☐ 363843000 coordination observable
└─▶ 363844006 pattern of coordination

- post-coordination mapping patterns

| | |
|---------------|--|
| Dx1, post-Dx2 | is a = Dx1 after = Dx2 |
| Dx, post-Px | is a = Dx after = Px (procedure) |



- post-coordination

| | | |
|---|---------------------------|--|
| history of disorders of nervous system and sense organs | is a | history of - disorder (situation) |
| | associated finding | nervous system and sense organ diseases (disorder) |

| | | |
|--------------------------------------|---------------------------|---|
| family history of digestive disorder | is a | family history of disorder (situation) |
| | associated finding | disorder of digestive system (disorder) |



- post-coordination mapping patterns

| | |
|----------------------|---|
| history of Dx | is a = history of - disorder (situation) associated finding = Dx (disorder) |
| family history of Dx | is a = family history of disorder (situation) associated finding = Dx (disorder) |

☐ 363843000 coordination observable
└─▶ 363844006 pattern of coordination

- post-coordination mapping patterns
 - found 90+ post-coordination mapping patterns
 - **review & refine**, referencing existing SCT core concepts
 - **re-apply** the patterns to post-co similar HKCTT concepts
 - to maintain mapping **quality & consistency**
 - to improve mapping **efficiency**

- [-] [] 308557000 meetings and conferences
 - [-] [] → 229057006 meetings
 - [+] [] 229058001 case conference
 - [+] [] 2494005 nursing conference
 - [+] [] 311459003 team meeting

[-] [] 308557000 meetings and conferences
[-] → 229057006 meetings
[-] [] 229058001 case conference

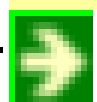
- mapping team discussion meetings
 - mapping team members
 - bi-weekly discussion meetings
 - to review mapping rules & practices
 - to review post-coordination patterns

☐ 410662002 concept model attribute
└─> 260686004 method

- post-coordination
 - 26% (10400) concepts mapped by post-coordination

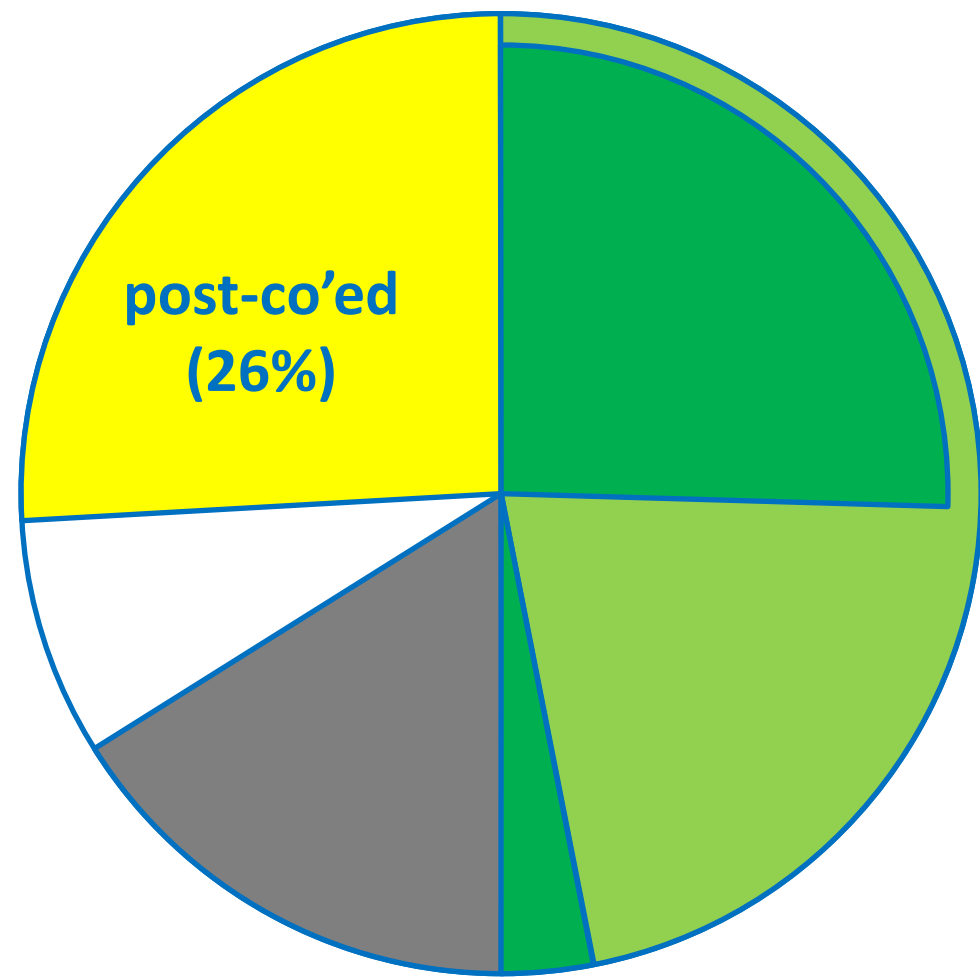
410662002

concept model attribute



260686004

method



☐ 410662002 concept model attribute
└─> 260686004 method

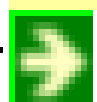
- post-coordination verification
 - 5% (500 / 10400) sample of post-co mappings
 - 90 post-co mapping patterns
 - verification by overseas experts

☐ 410662002 concept model attribute
└─> 260686004 method

- post-coordination verification
 - 56% (280 / 500) mappings
 - 60% (54 / 90) mapping patterns
 - expert agrees with HA, or
 - expert advice is taken
 - **re-apply** verified patterns to post-co similar concepts

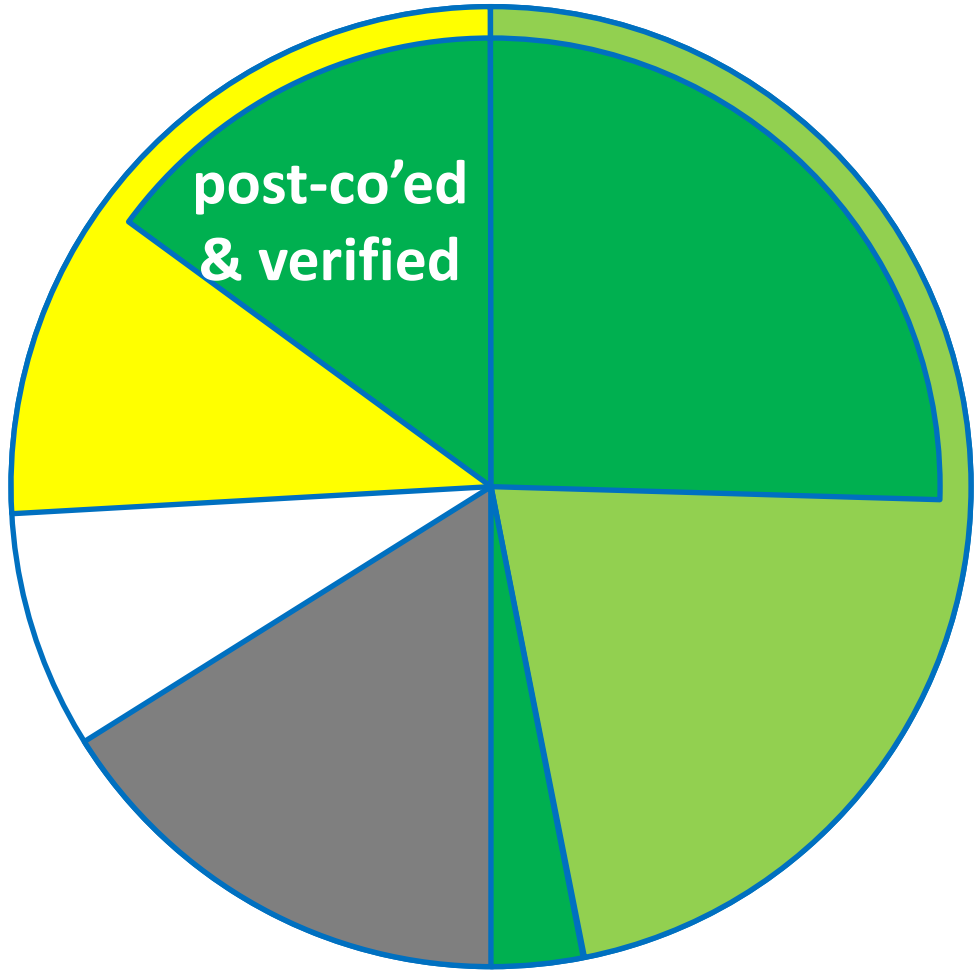
410662002

concept model attribute



260686004

method



[-] [] 371524004 clinical report

[-] [] → 371534008 summary report

[] 371536005 flow sheet report

[+] [] 422735006 summary clinical docu

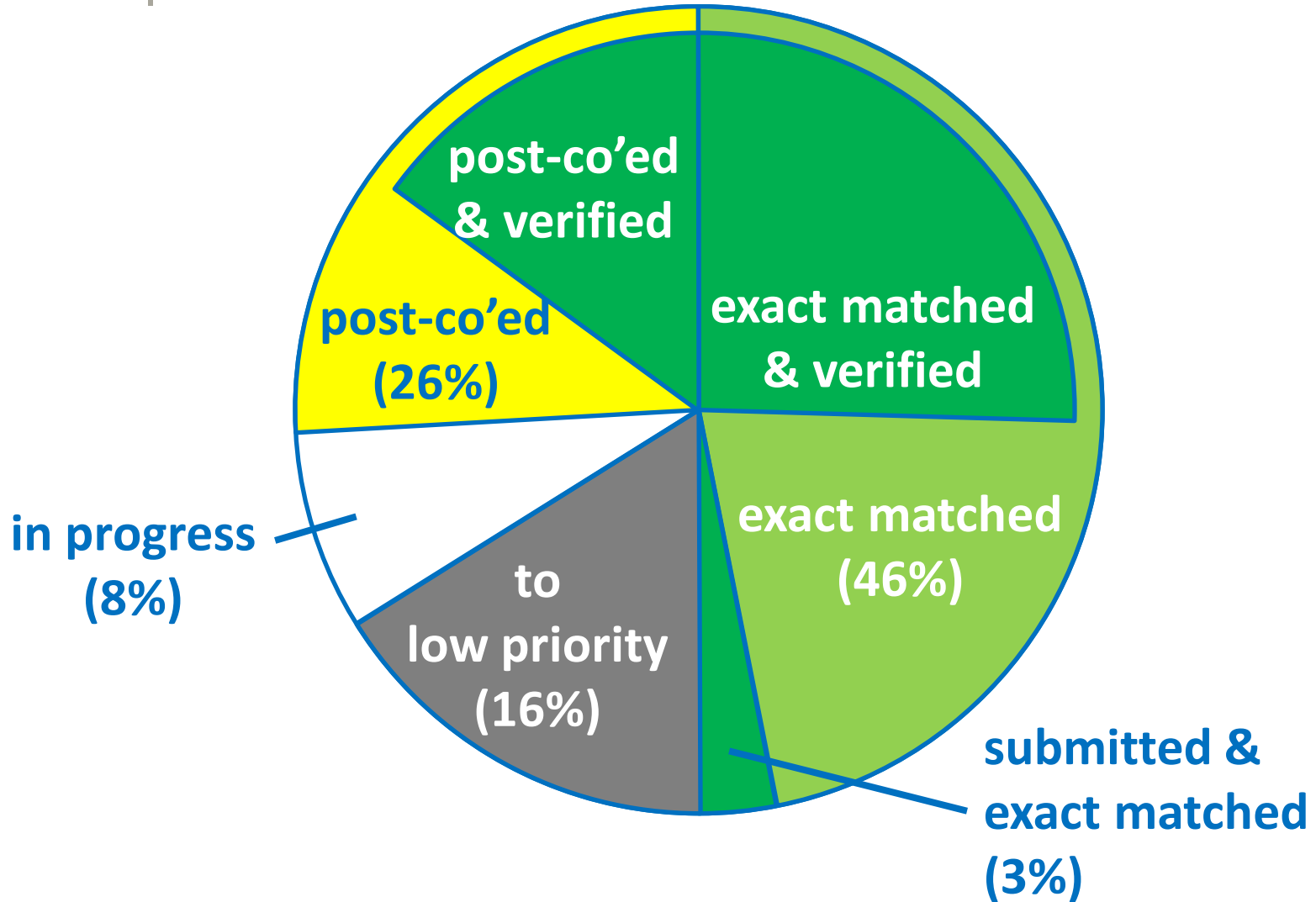
[] 406550009 summary of needs

| | | | | |
|-----|-----|-------------|-----------------|-------------------|
| [-] | [] | 371524004 | clinical report | |
| | [-] | → 371534008 | summary report | |
| | | [] | 371536005 | flow sheet report |

- mapping results

- 46% (18600) concepts exact matched
 - 55% (10100) mappings verified (NORM from Lexical Tools)
- 3% (1100) concepts submitted & added to SNOMED-CT
- 26% (10400) concepts mapped by post-coordination
 - 56% (280 / 500) mappings verified (overseas expert)
- 16% (6600) concepts to lower priority

- [-] 371524004 clinical report
- [-] → 371534008 summary report
- [-] 371536005 flow sheet report



[-] 128927009 procedure by method

[-] → 223482009 discussion

- 304672001 discussion about a pro
- + 223469001 discussion about activi
- 304671008 discussion about beha
- 223488008 discussion about chan
- 439112006 discussion about child
- + 223471001 discussion about disor
- 445033007 discussion about ideal
- 223487003 discussion about optio
- + 223486007 discussion about prefe
- 440546007 discussion about pregn
- + 223483004 discussion about proce
- 223482009 discussion

| | | | |
|-----|-----|-------------|----------------------------------|
| [-] | [] | 128927009 | procedure by method |
| | [-] | → 223482009 | discussion |
| | | [] | 304672001 discussion about a pro |

- the mapping approach

- enables eHR records to be captured, transmitted, stored, searched, retrieved, analysed using SNOMED-CT
- enriches HKCTT with semantic definitions & relationship hierarchies, enabling semantic & hierarchical analysis of eHR records in future

| | | | |
|-----|-----|-------------|----------------------------------|
| [-] | [] | 128927009 | procedure by method |
| | [-] | → 223482009 | discussion |
| | | [-] | 304672001 discussion about a pro |

- the bonus

- uncovers problem concepts accumulated but hidden inside the vocabulary table, including duplicated, ambiguous & inconsistent concepts
- provides easy & efficient method for cleansing

[-] [] 128927009 procedure by method

[-] [] → 223482009 discussion

[-] [] 304672001 discussion about a pro

- lessons learnt

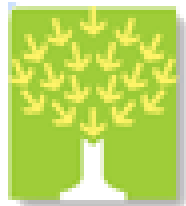
- follow **standards**
- use **tools** to speed up
- seek **authority** to fix root problems
- use **priority** to adjust progress
- track **patterns**, review & re-apply to similar tasks
- hold **discussion** meetings to align practices
- seek **expert** advices and do external **verifications**

- 304881005 psychodynamic interventions re
- 439151001 acknowledgement of feeling
- └─ 225216003 acknowledging anxiety

- 304881005 psychodynamic interventions re
- 439151001 acknowledgement of feeling
- └─ 225216003 acknowledging anxiety



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Unified Medical Language System[®] (UMLS[®])

304881005

psychodynamic interventions re

→ 439151001

acknowledgement of feeling

↳ 225216003

acknowledging anxiety

- Dr N T Cheung
- Ms Vicky Fung
- Ms Maggie Lau
- Ms Karen Szeto
- Ms Austen Wong
- Mr Eric Ho
- Ms Ellen Chan
- Ms Karen Li
- Mr Patrick Chu
- Mr John Mok
- Mr P C Ho
- Mr William Ho
- Mr Wilson Yu
- Ms H H Tsui
- Mr Andy Wai
- Ms Cherry Yip
- Ms Gladys Yip



☰ 255277001 formations
└─> 261782000 end

Thank you !

