

CMV 3 Report: Annex 2

121019 Methodology Project Belgian terminology Procedures 2011-2012

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1. Governance

Contract Ctr-n11-01-Serveur terminologique-M.I.M.3

Function	Expert	Organisation	From	To
General project management	Luc Nicolas	FOD/SPF Health Belgium	15/12/2010	
Medical project management	dr. Benny Van Bruwaene	eHealth Belgium	15/12/2010	
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Function	Expert	Organisation	From	To
		Brussels		
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2. Version history

Date	Version
27/10/2011	111027 Reference Terminology Medical Procedures methodology.doc
21/11/2011	111202 Terminology Medical Procedures methodology.doc
06/04/2012	120406 Terminology Medical Procedures methodology.docx
07/08/2012	120807 Terminology Medical Procedures methodology.docx

3. Objective

The purpose is to constitute a Reference terminology for Procedures based on Snomed and translated in French and Dutch.

The objective of the reference terminology is to provide the physicians and other care takers a selection of validated clinical concepts for reporting in the medical record. These concepts will be also the standard in Kmehr/HL7-messages for communication between systems. These concepts should be cross mapped with all secondary coding systems (ICPC, ICD-..., RIZIV-INAMI, ...) in order to avoid double data entry and coding.

Registration in the medical record requires highly granular concepts. Snomed is a vast terminology system with this same objective and was created by combining SNOMED Reference Terminology (SNOMED RT) and Clinical Terms Version 3 (CTV3), formerly known as the Read Codes.

When faced with SNOMED CT® terms in a translation context, it is useful to bear in mind that the terminology is not 100% consistent and that errors or inconsistencies do occur on the word as well as the system level (Asta Hoy, 2006, Spackman et al. 2002 & 2004, Bodenreider et al. 2004).

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Therefore, it was decided to build an independent Belgian Reference Terminology which is based on a Snomed CT Refset and will be linked to other relevant classifications and coding systems.

In a first step all the relevant Snomed CT concepts will be selected and then will be translated in French and Dutch resulting in a Snomed CT subset.

In a second step the accepted procedures will be cross mapped with secondary coding systems (ICD-9-CM, ICD-10-CM, RIZIV/INAMI).

4. Working packages

The working group 'Medical Procedures' aims at the development of two work packages:

1. Therapeutic interventions (e.g. surgery and therapy)
2. Diagnostic procedures

5. General methodology

5.1. Selection concepts

The Belgian reference terminology aims at clinical documentation and reporting. The quality (granularity) of the concepts is directly proportional to the care with which options (clinical protocols, alerts, studies) are presented to the user (Tim Benson, 2010).

This granularity is therefore higher than required for epidemiology (ICD) or reimbursement purposes (RIZIV/INAMI, DRG).

This does not mean that the reference terminology should be extended to cover all detail. Standardization is needed to the point decision and administrative support is required. In the electronic patient record full detail of the concepts will be described in free text (e.g. 'Operation protocol').

Because the reference terminology can be used as a vocabulary in electronic health records, the choice of a concept is restricted according to general guidelines (cf Infra).

The objective is to start with a vocabulary covering more than 90 % of diagnoses and procedures without biasing registration with terms which might be ambiguous or superfluous.

The strategy is to start off with a limited corpus of agreed terms and to extend this vocabulary with new terms based on the real life use of health care professionals who will be able to request new terms if they feel they don't find the proper concept.

For diagnoses and procedures, it is estimated that 30.000 concepts (without synonyms) will be sufficient for each domain.

In order to know the exact meaning of a Snomed concept it is sometimes necessary to look up the parents, children and/or attributes of a concept in the Snomed ontology. Any Snomed browser can be used, e.g. CliniClue.

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CliniClue can be installed from <http://www.cliniclue.com/software>. The Belgian terminologist in this project can accept the conditions of use since he/she is covered by the agreement between the FOD/SPF and the IHTSDO to use Snomed.

All concepts will be evaluated by two physicians: one French and one Dutch speaking. The evaluation of the concept is based on the English label and ev. on CliniClue.

When a Concept is considered valid the field [Concept ok?] is marked with 'x'.

When the concept is considered obsolete the field [Concept ok?] is marked with 'd' (to be deleted, = to be retired). Fill out the field [Rule] with the reason pointing to a rule in the Methodology.doc.

When the field [Concept ok?] is marked with 'r' the concept is to be reviewed. Fill out the field [Comment]. Quote to be avoided.

When a concept is considered to be a synonym of an existing term, the field [Concept ok?] is marked with 's'. Put the the preferred Snomed concept in the field [Rule].

If a concept is to be added the field [Concept ok?] is marked with 'a'
The concept is defined in [rule] with the closest Snomed definition.
A request for addition of the concept will be submitted to the IHTSDO at the end of the project.
The temporary Snomed ConceptId in the Belgian Namespace will be entered and the translation proposed.

Example:

Snomed Term	Snomed CT number	Concept OK?	Rule
Open appendectomy	Temporary conceptid in Snomed Namespace	a	80146002 appendectomy 129236007 open approach

If a concept is acceptable but needs further refinement (subtype qualification):

[Concept ok?] = postco.

[Rule]: name of attribute= allowable values.

Example:

Snomed Term	Snomed CT number	Concept OK?	Rule
appendectomy	80146002	postco	260507000 access = < 309795001 surgical access values

Guidelines for the selection for the controlled medical vocabulary:

5.1.1. Clinical

'Clinical' concepts are concepts as used in electronic medical records and in medical reports.

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If there is doubt, check the term in English (or French, NI) in approved sources of information (special dictionaries, textbooks, specific homepages on the Internet, medical literature).

- English: <http://gateway.nlm.nih.gov/gw/Cmd>
- In French <http://www.cismef.org/>
- All languages: Google (literature and/or professional websites)

The existence of a concept in a given classification is not a sufficient condition to accept the concept because the concepts in a classification can be too broad for registration.

5.1.2. Distinct

Concepts should be clear and not ambiguous.
Homonyms are excluded.

Terms containing '... or... ' are excluded. They are often used in classifications but never in a medical record. One could split the term in two terms apart.

The same is true for terms containing '... other... ' In this case one doesn't know what concept is meant if one doesn't know the given hierarchy of the classification.

In surgery the surgical access and access device (e.g. robot assisted) are to be specified in each concept.

E.g. 'appendicectomy' exists in Snomed and 'open appendicectomy' is missing. 'open appendicectomy' should be added in a pre- or post-coordinated way because the concept 'appendicectomy' is the parent and could be an 'open appendicectomy' as well as a 'laparoscopic appendicectomy'.

5.1.3. Specific

The granularity of the chosen concepts should satisfy the needs of all health care professionals (general practice, super specialists, nurses, ...).

Vague terms are to be avoided. E.g. 'cardiac procedure' is too general.

On the other hand, different levels of specificity are to be accepted because the health care professional is not always able to give all needed specificity.

E.g. in the history taking, the patient might refer to a previous 'coronary bypass' without knowing which arteries were pertained.

5.1.4. No synonyms

One concept in the reference terminology excludes all other concepts.

Sometimes, the difference between two Snomed concepts can be so close that the choice between the two concepts cannot be done in an univocal way. Then one concept will be accepted and the other will be withdrawn.

In order to find synonyms the concepts will be presented sorted by body system, body site and by SnomedId.

5.2. Pre- vs Post-coordination

Natural language represents complex concepts by the combination of concepts using words.

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A normal dictionary will explain the words (components or atomic concepts) and will not explain all combined concepts.

Natural language follows a post-coordinated approach of representing complex concepts.

Electronic health record systems use to represent complex concepts by a single code. This is what we call a pre-coordinated approach. A terminology completely based on pre-coordination will lead to an infinite number of concepts due to the infinite number of possible combinations of different concepts.

In the health record we can distinguish primary concepts (gender, diagnosis, treatment, encounter, event, social context, medication, procedure, observable entity) and attributes (body structure, organism, substance, physical force, physical object).

Snomed allows the use of post-coordinated expressions to represent a meaning using a combination of two or more codes.

The combination of a primary concept with attributes to refine the meaning of the concept is called 'subtype qualification'.

Axis modification is where the post-coordination fundamentally changes the meaning of the concept, rather than simply refines it. E.g. 'asthma' vs. 'absence of' 'asthma'. 'absence of' changes completely the meaning of 'asthma'.

The combination of primary concepts with a causal or temporal relationship is called 'concept combination and linkage'.

E.g. "chronic renal failure" "due to" "hypertension"

5.2.1. Concept combination and linkage

In the medical record, the physician might want to indicate the relationship between two concepts which are recorded in their own right (e.g. a diagnosis and a treatment) with a linkage concept (e.g. 'reason for', 'indication for', 'caused by', 'due to').

The structure of the electronic patient record should provide the possibility to define relationships between the different primary elements (diagnosis, treatment, encounter, event, medication, procedure).

A concept combination should be represented by the registration of the two concepts apart and their relationship: concept1 – relationship type – concept2

In general concepts combining primary concepts are to be avoided.

E.g. Subcutaneous mastectomy for gynecomastia

Different procedures during the same operation are coded apart and not by a combined pre-coordinated code.

E.g.

3001009 | total lobectomy with bronchoplasty |

261563006 | sleeve pulmonary artery resection |

E.g.

71743000 | single valve replacement with commissurotomy of two valves |

Is a combination of a valve replacement and a commisurotomy.

This concept will rather be deleted and replaced by 34068001 | heart valve replacement | and 59469009 | commissurotomy | each with subtype qualification of the type of valve (cf. infra).

5.2.2. Time or Context indications

In the medical record, any concept will be defined in time with a start date/time and a stop date/time. The relationship between the time of the event and today is not given in the concept but with the meta-information of dates or context (e.g. emergency).

5.2.1. Axis modification

Axis modification is where the post-coordination fundamentally changes the meaning of the concept, rather than simply refines it.

Typical instances are negative expressions like 'without'

In order to avoid the explosion of the terminology, pre-coordinated concepts with axis modification are eliminated and are replaced by post-coordination in the medical record of the axis modifier with the primary concept.

5.2.2. Subtype qualification

Subtype Qualification is where the concept is elaborated (that is, linked with an attribute concept) in such a way as to result in a post-coordinated expression which is equivalent to a subtype of the unelaborated concept (T. Benson, 2010). For example, the concept 'asthma' can be qualified with the attribute concept 'severe' to produce an expression that is the subtype of the concept 'asthma'.

Snomed contains pre-coordinated concepts (disorders, procedures,...) and atomic concepts (organism, site, substance, gender ...) which can refine the primary concept.

When a pre-coordinated concept ("fracture of tibia") is defined in Snomed by his components ("fracture", "site"= "tibia"), the concept is fully defined [IsPrimitive]=0.

The pre-coordinated concept "fracture of tibia" can be replaced by the combination of three concepts "fracture", "site"= "tibia").

When a complex concept is not defined by his components, the concept is labeled [IsPrimitive]=1.

Components cannot be defined further because they are the lowest level of granularity (atomic concepts). They are always [IsPrimitive]=1.

If a concept is acceptable provided further attributes are qualified [concept ok] = 'postco'

The Snomed attributes are annotated in [Rule] with natural language.

E.g.

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Snomed Term	Snomed CT number	Concept OK?	Rule
bilobectomy of lung	173170008	postco	lobes
biopsy of pleura	116025006	postco	open approach OR VATS - Video assisted thorascopic surgery
aorto-femoral arterial bypass	405482000	postco	vein graft material OR prosthetic patch

The annotation will later be defined in formal SNOMED CT Compositional Grammar Chapter B.3 of the document:

<http://dwidgis02.salud.gob.mx/forohl7/html/infrastructure/terminfo/terminfo.htm#TerminfoAppendRefsGrammar>

5.3. Translation

In the development of a reference terminology one focuses on the selection of the concept and one preferred term in Fr and NL.

Although the same concept can be described with several terms, one preferred term will be selected in order to keep the vocabulary concise and to maximize the unity of language.

Since the preferred term is often the only interface for the physician, the term should be univocal without further explanation.

In a second phase, some diagnoses, procedures can be documented in the terminology server with a full description and/or graphic interface, but this information will seldom be consulted by the health care professional. The preferred term will be the interface and should serve as a mnemonic.

The single compulsory criterion of the translated preferred term is the exact correspondence with the Snomed CT concept.

To some extent, techniques like borrowing or literal translation may be recommended as long as concept equivalence is ensured: the resulting target language terms will often be internationally recognizable and psychologically acceptable to clinicians, and they make it possible to conform with the structure of SNOMED CT®. However, several more genuinely functionalist techniques may often be preferable, for instance transposition, amplification/description, and established equivalents.

In order to keep a unity of language, guidelines are provided (Hoy Asta, 2006, IHTSDO, 2008):

- Unambiguity (a term having the status of “preferred term” must not refer to more than one concept in the hierarchy in question)
- Linguistic correctness (national syntactic and orthographic rules must be complied with)
- Motivation (immediately understandable terms, i.e. terms reflecting the characteristics of the underlying concept, should be preferred)
- International recognizability (terms based on Latin and Greek word elements should be preferred)
- Psychological acceptability (clinicians’ habits should be taken into account whenever possible)

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- Systematism & consistency (similar morphological and syntactical solutions should be sought for terms covering semantically similar concepts).

Unfortunately, these requirements will often be in conflict. Psychological acceptability tends to be an obstacle to compliance with several other principles. E.g. Commonly used and accepted eponyms such as Apgar score or Down syndrome are at odds with the wish for motivation (Asta Hoy, 2006).

General guidelines IHTSDO, 2008:

1. Description preferred over eponym. Combine the Eponym ev. with the medical term. Eg Bricker's ureteroileostomy
2. Lower case letter in the first word is recommended, unless it is an eponym or a proper name. Follow international taxonomic names: <http://www.ncbi.nlm.nih.gov/Taxonomy/> e.g. Chlamydia pneumoniae
3. No abbreviations or only widely used abbreviations (ev. with full description)
4. Prefer a noun over adjective « de la prostate » vs. « prostatique »
5. Use reference vocabulary in the target language.
Widely recognized dictionaries in
NI: Zakwoordenboek der Geneeskunde, Kluwer.
Fr:
Dictionnaire Illustré Des Termes De Médecine, Prodim
http://www.prodim.be/n_garnier04.htm
<http://dictionnaire.academie-medecine.fr/>
6. A list of translated ICD-9-CM procedures and local lists of terms (e.g for operating room planning UZB, UZL) might help as a guidance
7. Consultation of a medical specialist in the domain might be useful/necessary.

6. Specific guidelines for Elimination

When a Snomed concept is not accepted and thus eliminated the reason why the concept is not accepted will be documented.

This elimination can be done manually by the terminologist or in an automatic way by a SQL query. Eg. if 'family history of' then eliminate the concept [concept ok]='d' [rule]= axis modification

This allows the terminologists and users (health care professionals) to understand how the terminology is built and it allows easy and consistent corrections if needed.

Automatic rules are proposed to the all group of terminologists and are documented when accepted.

When a rule to eliminate a type of Snomed concepts is accepted on a meeting, the rule is applied filtering the Snomed words on the English label or on the 'is a' relationships.

[concept ok] is put on 'd'

[rule] is filled out with a rule from the Methodology.doc

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Wording English label Snomed	Rule	Comment	Date meeting
Procedure on...	Too vague		07/08/2012
Operation on	Too vague		07/08/2012
... blood vessel...	Too vague		07/08/2012
..not spec...	Ambiguous		07/08/2012
..and/or ...	Ambiguous		07/08/2012
..or ...	Ambiguous		07/08/2012
..other...	Ambiguous		07/08/2012
unspecified, specified	Ambiguous		07/08/2012
emergency	Time indication		07/08/2012
without	Negative expression		07/08/2012
Non-	Negative expression		24/10/2012
parents of the Procedures 'primary'	Quasi synonym concept with 'primary'	All concepts 'primary' (first intervention) are accepted and are translated without 'primary' because a first operation (primary) is the default if not otherwise specified. [concept ok] = 'x' The parents of the concepts 'primary' are eliminated because they are quasi synonyms with 'primary'. [concept ok] = 'd' [rule]: ambiguous "child primary"	19/10/2012
Surgical biopsy	Quasi synonym Open biopsy		19/10/2012
percutaneous biopsy	quasi synonym of needle biopsy		19/10/2012
closed biopsy	Negative expression, quasi synonym of biopsy		19/10/2012
Closed manual reduction of fracture of	Quasi synonym Closed reduction of fracture of		19/10/2012
Manual reduction of closed fracture of	Combination concept with type of		19/10/2012

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Wording English label Snomed	Rule	Comment	Date meeting
	fracture		
Reduction of closed ...fracture with manipulation	Combination concept with type of fracture	Quasi synonym Closed reduction of fracture	19/10/2012
Procedures 'secondary'	Ambiguous	All concepts 'secondary' are eliminated because it is not clear if the intervention is a redo or a second complementary intervention.	19/10/2012
Incision and exploration of	Ambiguous	'Incision' is not clear because the surgical access is not known. Therefore it will be replaced by 'exploration of' and the post-coordinated surgical access	19/10/2012
Removal of foreign body by incision	Quasi synonym of 'Removal of foreign body'	'Incision' is not clear because the surgical access is not known.	
'diagnostic' 'therapeutic'	Concept combination	Concepts 'diagnostic' and 'Therapeutic' combine a procedure with the 'procedure intent'. Moreover the difference between 'diagnostic' and 'therapeutic' is not always clear cut. The single procedure without intent is preferred.	19/10/2012
....reduction and... immobilization... fixation... traction... bracing... anesthesia...	Concept combination	Many combinations are present of the intervention (eg reduction) and the fixation. Many different types of fixations are possible, not all combinations with all types of fixations can be pre-coordinated.	19/10/2012

7. Post-coordination

7.1. Rules [Concept OK?] = 'postco'

Snomed Term	Snomed CT number	Rule
Biopsy of	86273004	363704007 procedure site = < 442083009 anatomical or acquired body structure ,

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Snomed Term	Snomed CT number	Rule
		<p>405816004 procedure morphology = << 49755003 morphologically abnormal structure ,</p> <p>260686004 method = 8889005 excisional biopsy OR 70871006 incisional biopsy OR 129300006 puncture - action ,</p> <p>405815000 procedure device = << 118377000 biopsy needle OR 439336003 brush biopsy OR 385667003 biopsy forceps OR 102307003 surgical knife ,</p> <p>260507000 access = 129236007 open approach - access OR 103388001 percutaneous approach OR 129237003 closed approach ,</p> <p>425391005 using access device = << 37270008 endoscope ,</p> <p>258174001 imaging guidance = < 258174001 imaging guidance </p>
Exploration of	122458006	260507000 access = <309795001 surgical access values , 424226004 using device = <<86174004 laparoscope OR <<37270008 endoscope OR < 23228005 Arthroscope, device
immobilisation by splinting	287630006	< 224898003 orthotic device
immobilisation by bandaging	182557005	< 224898003 orthotic device
internal skeletal fixation	118470002	424226004 using device = < 31031000 orthopaedic internal fixation system
external fixation of bone	257838009	424226004 using device = < 261200006 external fixation system
Reduction of fracture of	122859005	<260507000 access = <309795001 surgical access values , 424226004 using device = <<86174004 laparoscope OR <<37270008 endoscope OR < 23228005 Arthroscope, device
coronary artery bypass graft	232717009	272488003 from-structure = < 41801008 coronary artery structure , 272487008 into-structure = < 41801008 coronary artery structure ,

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Snomed Term	Snomed CT number	Rule
		424226004 using device = 261402001 left internal mammary artery OR 261403006 right internal mammary artery OR < 362072009 saphenous vein structure
saphenous vein graft replacement of coronary artery	3546002	272488003 from-structure = < 41801008 coronary artery structure , 272487008 into-structure = < 41801008 coronary artery structure
excision of tumor of	combination concept	

7.2. Robot assisted

Define operations which can be done with robot assistance as 'postco'

Eg

26294005 | radical prostatectomy |

Concept ok= postco

Rule= 424226004 | using device | = 82830000 | robotic arm, device |

7.3. Devices

Many procedures put devices, prostheses, stents.... which stay in the body for a certain time and constitute a health condition / situation or status.

As a general principal, the placement of a device, stent or prosthesis should always be coded with two separate concepts:

the procedure (with time)

and

the device which makes a situation 'in situ' from start date to stop date.

Snomed uses 'in situ' in pre-coordination to denominate the presence of a device Eg 401006003 | tracheal stent in situ | where 52101004 | presence of | could be used for post-coordination.

8. Translation

8.1. Automatic translation

In order to speed the translation and to enhance consistency, some translations will be proposed by combination of translated components.

To this purpose anatomical sites are translated in NI and Fr and are combined with the primary concepts.

En Label	Fr label	NI label
biopsy of	biopsie	biopsie van

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En Label	Fr label	NI label
open biopsy of	biopsie chirurgicale	open biopsie van
endoscopic biopsy	biopsie endoscopique	biopsie langs endoscopische weg van
needle biopsy of	biopsie à l'aiguille	naaldbiopsie van
percutaneous transluminal biopsy of	biopsie percutanée transluminale	percutane transluminale biopsie
fine needle biopsy of	biopsie à l'aiguille fine	fijne naaldbiopsie van
core needle biopsy of	biopsie au trocart	holle naaldbiopsie van
excision of	résection	excisie van
excision of lesion of...	résection d'une lésion	excisie van letsel ter hoogte van
excisional biopsy	biopsie-exérèse	excisiebiopsie van
incisional biopsy	biopsie par incision	incisiebiopsie van
biopsy ...lesion of...	biopsie d'une lésion	biopsie van letsel ter hoogte van
removal of foreign body of	extraction de corps étranger	verwijderen van vreemd lichaam uit
removal of lesion of	<i>Traduction selon contexte</i>	verwijderen van letsel ter hoogte van
debridement of open fracture of	débridement de fracture ouverte	débridement van open fractuur van
reduction of fracture of	réduction de fracture	reductie van fractuur van
closed reduction of fracture of	réduction fermée de fracture	gesloten reductie van
open reduction of fracture of	réduction chirurgicale de fracture	open reductie van fractuur van
reduction of dislocation of	réduction de luxation	reductie van luxatie van
closed reduction of dislocation of	réduction fermée de luxation	gesloten reductie van luxatie van
open reduction of dislocation of	réduction chirurgicale de luxation	open reductie van luxatie van
drainage of	drainage	drainage van
drainage of lesion of	drainage d'une lésion	drainage van letsel ter hoogte van
suture of	suture	hechten van
irrigation of	irrigation	irrigatie van
fistulization of	fistulisation	fistulisatie van

9. Rules [Concept OK?] = 'postco'

Snomed Term	Snomed CT number	Rule
heart valve replacement	34068001	363698007 finding site =< 17401000 cardiac valve structure , 260507000 access = <309795001 surgical access values

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Snomed Term	Snomed CT number	Rule
commissurotomy	37169002	363698007 finding site =< 17401000 cardiac valve structure , 260507000 access = <309795001 surgical access values
bilobectomy of lung	173170008	363698007 finding site = < 31094006 structure of lobe of lung
biopsy of pleura	116025006	260507000 access = (129236007 open approach OR 262256007 VATS - Video assisted thorascopic surgery)
aorto-femoral arterial bypass	405482000	424361007 using substance = 276311000 vein graft material OR < 257398000 prosthetic patch

10. Work Flow

10.1. Work lists

Field names presented in the working file:

Field Name	Legend
Body system	Serves to distribute working files to different medical departments
Procedure site	Serves to sort concepts in a semantic way
Procedure SnId	Is the old SnomedId which contains a semantic order
Laterality	Laterality means that the procedures can be done on either side (left, right, bilateral). The proposed Laterality comes from the Snomed attributes. However this attribute is not always available and the terminologist might need to complete it manually putting an 'x'.
Snomed number	Is the ConceptId of the principle Snomed concept
En_Label	Is the Fullyspecified name of Snomed
Fr_Canada	Is the Canadian French label if available
Rule NI	When [concept ok] ='postco' or 'a': the terminologist adds a concept/term which includes Snomed attributes, the attribute is referred to with the additional Snomed number(s). Use 'copy as compositional' in CliniClue (right clic) When [concept ok] ='d' put the rule for deleting the concept. E.g. 'too vague', 'postco commissurotomy'
Rule Fr	When [concept ok] ='postco' or 'a': the terminologist adds a concept/term which includes Snomed attributes, the attribute is referred to with the additional Snomed number(s). Use 'copy as compositional' in CliniClue (right clic) When [concept ok] ='d' put the rule for deleting the concept. E.g. 'too vague', 'postco commissurotomy'
Concept ok? NI	Cf. infra 'Selection concept'
Concept ok? Fr	Cf. infra 'Selection concept'
Fr_Label	Proposed French term or 'Translation Fr'

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Field Name	Legend
NI_Label	Proposed Dutch term or 'Translation NI'
Full description NI	Extensive description NI of the technique used (optional)
Full description Fr	Extensive description Fr of the technique used (optional)
Comment NI	Optional comment NI
Comment Fr	Optional comment Fr
ICD-9-CM NI	Cf. infra 'Mapping'
ICD-9-CM Fr	Cf. infra 'Mapping'
RIZIV-INAMI NI	Cf infra 'Mapping'
RIZIV-INAMI Fr	Cf infra 'Mapping'
Coder NI	Initials of Terminologist NI
Coder Fr	Initials of Terminologist Fr

10.2. Selection concept

All concepts will be evaluated by two physicians: one French and one Dutch speaking. The evaluation of the concept is based on the English label.

When a Concept is considered valid the field [Concept ok?] is marked with 'x'.

When the concept is considered obsolete the field [Concept ok?] is marked with 'd' (to be deleted, = to be retired). Fill out the field [Comment].

If a concept is acceptable in combination with an attribute, [Concept ok?] = 'postco'.

When a concept is considered to be a synonym of an existing term, the field [Concept ok?] is marked with 's'. Put the Snomed code (CliniClue) of the preferred term in the field [Comment]. Since the objective is not to gather information about synonyms [Concept ok?] may also be set to 'd' with a comment.

If a concept is to be added the field [Concept ok?] is marked with 'a', ConceptId (Snomed CT number) is entered and the translation proposed.

10.3. Translation

If a concept is accepted to be valid, the French and Dutch label will be proposed.

A French label is available from the French Canadian Snomed 3.5 for 8.846 concepts. The French terminologist can choose the Canadian label if accepted (copy/paste to 'Fr_Proposed') or can propose a new label.

10.4. Reconciliation

The evaluations by the French speaking and the evaluation of the Dutch speaking physician will be joined based on the Snomed code.

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When both physicians quoted 'x' or 'd' similarly, the selection/elimination of the concept is automatically confirmed and entered in the final terminology with the field [Concept ok?]= 'x' or 'd'.

When the judgment of both physicians differs, the records are presented to two other terminologists with the evaluation and comment of the first terminologists.
All disagreements after the second run are discussed in order to come to a consensus.

10.5. Mapping

All procedures will be mapped to ICD-9-CM and to RIZIV-INAMI after selection and translation. Mapping will be done after the selection of concepts and translation. However, when the terminologist accepts the concept and he knows the code(s), he/she can put the corresponding codes. If there is more than one code, separate each code with | (ASCII 124).

10.6. International validation

The selected concepts and the French and NI labels will be submitted to the national release centers of France/Canada/Suisse and of the Netherlands in order to have a subsequent validation.

10.7. Real life testing

When the reference terminology will be in real life testing and use, users will be connected to the terminology management system and will be able to request corrections and additions.

11. Mandatory reading

The document 'IHTSDO, 2008: Guidelines for Translation of SNOMED CT. ' is mandatory for all terminologists <https://docs.google.com/?pli=1&authuser=0#home> .

SNOMED CT Compositional Grammar Chapter B.3 of the document:

<http://dwidgis02.salud.gob.mx/forohl7/html/infrastructure/terminfo/terminfo.htm#TerminfoAppendRefsGrammar>

Section 6.2.2.4 (Attributes to define 'Procedures') of the SNOMED_CT_Technical Implementation Guide_Current-en-US_INT_20120131.pdf

12. References

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