

New concept proposal

Oncology Surgery

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1 Rationale

The *Oncology Surgery* concept is needed because it distinguishes surgical procedures related to a cancer treatment from other (surgery) procedures. This information enables running analyses by type of treatment (whether a surgery occurred or not) or by type of surgery. For this reason, even if it is purely inheriting from the Medical Procedure concept (no new composedOf), it allows typization of a procedure as an oncology related procedure by the means of class inheritance.

2 Comparison to other standards/data models

not applicable

3 Concept information

Concept or concept compositions or inherited	General concept name	General description	Contextualized concept name	Contextualized description	Type	Standard	Value set or subset	Meaning binding	Cardinality
concept	Oncology Surgery	invasive intervention performed for, with or on behalf of an individual whose purpose is to improve, maintain or promote health, or functioning conditions in the context of an oncological disease, by the means of a partial or complete exeresis of a solid tumor lesion that is the organic substrate of this disease	Oncology Surgery	invasive intervention performed for, with or on behalf of an individual whose purpose is to improve, maintain or promote health, or functioning conditions in the context of an oncological disease, by the means of partial or complete exeresis of a solid tumor lesion that is the organic substrate of this disease	Medical Procedure				
inherited	code	coded information specifying the concept	code	coded information specifying the oncology surgery	Code				1:n
inherited	body site	anatomical site or structure associated to the concept	body site	body site where procedure was performed	Body Site				0:1

inherited	start datetime	datetime at which the concept started	start datetime	datetime the oncology surgery started	temporal				1:1
inherited	end datetime	datetime at which the concept ended	end datetime	datetime the oncology surgery ended	temporal				0:1
inherited	intent	intention for the concept	intent	intention for the oncology surgery	Intent				0:1

General concept	Cardinality for concept to Administrative Case	Cardinality for concept to Provider Institute	Cardinality for concept to Pseudo Identifier	Cardinality for concept to Source System
Oncology Surgery	0:1	1:1	1:1	1:1

4 Impact on the SPHN Dataset

No change is expected in other concepts from the SPHN dataset.

5 Discussion

5.1 Resection margin and residual tumor stage

The Oncology Surgery concept proposal originally contained a resection margin composed of representing the status and/or the size of the residual tumor, because such an assessment is commonly made after an oncology surgical procedure. The resection tumor stage (also referred as resection tumor status) R0, R1, R2, RX is related to residual tumor in the different sources (NCI Thesaurus and SNOMED CT), and resection margin may also refer to the size of the margin. The resection margin information is however a result of an assessment, performed after the surgery. Therefore, the resection margin information is represented by a distinct project specific concept of Pathology Tumor Assessment (Event) that holds a relationship to the Oncology Surgery concept. The structure of this new concept distinguishes between the size of the margin and the residual tumor stage.

5.2 Restriction of the value set

CHOP codes form a large set, and, ideally, it would have been beneficial to build a subset of codes that are only found in oncology surgeries. Practically, it has appeared to be a difficult task because providers haven't such a catalog at their side yet and if they had built it from their historical data, the lists would not be guaranteed to be exhaustive, without mentioning the evolving aspect of practices.

In addition, if a code were found in this putative subset, it would possibly suggest that this procedure is generally executed for a specifically oncological treatment. Actually, one operation generates multiple instances of CHOP codes and some of them are not oncology-specific per se. For instance, a tumor excision would consist of three (simplified) steps: 1) opening the patient 2) proceed to the exeresis 3) closing the patient; in this operation, steps 1 and 3 will generate instances of Oncology Surgery, but their CHOP codes are not specifically oncological.

6 Example

A patient underwent a resection of the liver to remove a metastasis originating from colorectal cancer like in *R1 resection of colorectal liver metastasis - What is the cost of marginal resection?* (Niv Pencovich et al., Journal of Surgical Oncology, 2019 Mar, <https://pubmed.ncbi.nlm.nih.gov/30548552/>)

Oncology Surgery

code:

identifier: 50.20

name: Lokale Exzision oder Destruktion von Gewebe oder Läsion der Leber und partielle
Hepatektomie, n.n.bez.

coding system name and version: CHOP-2022

body site:

code:

identifier: 10200004

name: Liver structure (body structure)

coding name and version: SNOMED-CT-2023-04-30

start datetime: 2018-12-03

end datetime: 2018-12-03

intent:

code:

identifier: 373808002

name: Curative - procedure intent (qualifier value)

coding system name and version: SNOMED-CT-2023-04-30