Change Request / New concept proposal
Medical Procedure

Author	Kristin Gnodtke	Date last updated	10.11.2023
Project	General interest	Contact	DCC
Dataset release	2024.1	Consulted expert	-

1   Rationale

The current *Procedure* concept (release 2023.2) is described as "invasive or non-invasive intervention performed for, with or on behalf of an individual whose purpose is to assess, improve, maintain, promote or modify health, functioning or health conditions". As the concept description refers to a medical procedure this concept will be renamed to *Medical Procedure* (resulting in a new concept due to concept name change).

The new *Semantic Mapping* concept (introduced in release 2024.1) contains a datetime which can also represent the datetime of coding. It is therefore not necessary to include a 'coding datetime' in the new (Medical) Procedure concept, as opposed to the original 'Procedure' concept (up to release 2023.2).

2   Comparison to other standards/data models

2.1   SNOMED CT

In SNOMED CT there is a hierarchy of procedures and the top level concept of this hierarchy is: 71388002 |Procedure (procedure)|. As SNOMED CT provides codes for clinical ideas the semantic tag of (procedure) is reflecting the meaning of a medical procedure.

2.2   HL7 FHIR

HL7 FHIR provides a Procedure resource described as follows "An action that is or was performed on or for a patient, practitioner, device, organisation, or location. For example, this can be a physical intervention on a patient like an operation, or less invasive like long term services, counselling, or hypnotherapy. This can be a quality or safety inspection for a location, organisation, or device. This can be an accreditation procedure on a practitioner for licensing."

A project of   SAMW ASSM
Schweizerische Akademie der Medizinischen Wissenschaften
Académie Suisse des Sciences Médicales
Accademia Svizzera delle Scienze Mediche
Swiss Academy of Medical Sciences

SIB
Swiss Institute of Bioinformatics

SIB | Swiss Institute of Bioinformatics
PHI | Personalized Health Informatics Group
www.sphn.ch | dcc@sib.swiss

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 for composedOf
concept	**Medical Procedure**	invasive or non-invasive intervention performed for, with or on behalf of an individual whose purpose is to assess, improve, maintain, promote or modify health, functioning or health conditions	**Medical Procedure**	invasive or non-invasive intervention performed for, with or on behalf of an individual whose purpose is to assess, improve, maintain, promote or modify health, functioning or health conditions				SNOMED CT: 71388002 |Procedure (procedure)|	
composedOf	code	coded information specifying the concept	code	coded procedure information	Code	SNOMED CT; CHOP or other			1:n
composedOf	body site	anatomical site or structure associated to the concept	body site	body site where procedure was performed	Body Site				0:n
composedOf	start datetime	datetime at which the concept started	start datetime	datetime the procedure started	temporal				1:1
composedOf	end datetime	datetime at which the concept ended	end datetime	datetime the procedure ended	temporal				0:1

composed Of	intent	intention for the concept	intent	intention for the procedure	Intent			0:1

General concept name	Cardinality for concept to Administrative Case	Cardinality for concept to Data Provider Institute	Cardinality for concept to Subject Pseudo Identifier	Cardinality for concept to Source System
Medical Procedure	0:1	1:1	1:1	1:1

4   Impact on the SPHN Dataset

The concepts that were initially inheriting from Procedure (Radiotherapy Procedure, Electrocardiographic Procedure, FOPH Procedure) will be inheriting from Medical Procedure.

5   Discussion

The *Medical Procedure* concept contains the same composedOf as the previous *Procedure* concept except the coding datetime.

The *Medical Procedure* concept serves as template (blueprint) for more granular medical procedure concepts such as Radiotherapy Procedure. Common composedOfs of a procedure are defined only once. In addition, the concept can be instantiated directly and allows to capture procedure data without specifying the type of the procedure explicitly through separate SPHN concepts.

The cardinality for the composedOf body site has been changed from 0:1 to 0:n as several body sites can be involved, e.g. in the new *Organ Support* concept (release 2024.1), which inherits from the *Medical Procedure* concept.

6   Example

Example 1: *Medical Procedure* concept used in a project that is actively working with the SNOMED CT attribute relationships. Therefore, the information of the body site does not need to be instantiated, it can be derived by the project via SNOMED CT attribute relationship (has procedure site - Direct: 59820001 |Blood vessel structure (body structure)|).

Medical Procedure

    code: SNOMED CT:77343006 |Angiography (procedure)|
    body site: -
    start datetime: 15.01.2023
    end datetime: -
    intent: -

Example 2: *Medical Procedure* concept with code, body site and start datetime instantiated.

Medical Procedure

    code: SNOMED CT:77343006 |Angiography (procedure)|
    body site: SNOMED CT:59820001 |Blood vessel structure (body structure)|
    start datetime: 15.01.2023
    end datetime: -
    intent: -

A project of

SAMW ASSM
Schweizerische Akademie der Medizinischen Wissenschaften
Académie Suisse des Sciences Médicales
Accademia Svizzera delle Scienze Mediche
Swiss Academy of Medical Sciences

SIB
Swiss Institute of Bioinformatics

SIB | Swiss Institute of Bioinformatics
PHI | Personalized Health Informatics Group
www.sphn.ch | dcc@sib.swiss