

New concept proposal

Insurance Status

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1. Rationale

The status of a patient's medical insurance can be an important characteristic to record, as it could have an impact on the amount and type of care received, the length of stay, or the cost of stay. Analysing the impact of this demographic characteristic on overall care is therefore an important task.

2. Comparison to other standards/data models

2.1. LOINC

LOINC has the concept Coverage type ([87520-3](#)), which they define as such:

"A high level description of a patient's health coverage type, including various categories of insurance (public, private, etc.) and self-pay."

It is linked to the HL7 FHIR resource `CoverageTypeAndSelf-PayCodes` below.

2.2. UMLS

UMLS has multiple concepts which describe health insurance, including Health Insurance (CUI C0021682), linked to MeSH (D007348) and NCI (C157356) terms with the same names:

Insurance providing coverage of medical, surgical, or hospital care in general or for which there is no specific heading. (MSH)

A type of insurance designed to cover some of or all the cost of treating an insured person's illnesses or injuries. In some cases, it pays for preventive care, such as annual physicals and diagnostic tests. (NCI)

The term Insurance Coverage (C0376629), linked to MeSH term D019458, is described as such:

Generally refers to the amount of protection available and the kind of loss which would be paid for under an insurance contract with an insurer. (Slee & Slee, Health Care Terms, 2d ed) **(MSH)**

2.3. HL7 FHIR

HL7 FHIR contains two resources describing this concept:

InsurancePlanType, <http://hl7.org/fhir/ValueSet/insuranceplan-type>, OID : 2.16.840.1.113883.4.642.3.870, defined as: This example value set defines a set of codes that can be used to indicate a type of insurance plan.

CoverageTypeAndSelf-PayCodes, <http://hl7.org/fhir/ValueSet/coverage-type> OID: 2.16.840.1.113883.4.642.3.520, defined as: This value set includes Coverage Type codes.

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	Insurance status	status of the patient's medical insurance	Insurance status	status of the patient's medical insurance				LOINC: 87520-3 [Coverage type]	
composedOf	coverage type	coverage type of the concept	coverage type	type of medical insurance held by the patient	qualitative		General; Semi-private; Private; None; Foreign; Other		1:1
composedOf	start datetime	datetime at which the concept started	start datetime	start date of medical insurance status	temporal				0:1
composedOf	end datetime	datetime at which the concept ended	end datetime	end date of medical insurance status	temporal				0:1

Concept cardinalities:

General concept name	cardinality for concept to Administrative Case	cardinality for concept to Data Provider	cardinality for concept to Subject Pseudo Identifier	cardinality for concept to Source System
Insurance status	0:1	1:1	1:1	1:1

4. Impact on the SPHN Dataset

None.

5. Discussion

The cardinality of the composedOf 'coverage type' should be 1:1. In case a patient has multiple types of insurance, the concept should be instantiated multiple times.

Additional information column: The value "Other" is to be used exclusively for cases in which patients have medical insurance which cannot be represented with other values in the value set. This is not to be used for representing ambiguous values such as "unknown", "not recorded", etc.

6. Example

6.1. Emergency department (ED) visit

Insurance status

coverage type: **General**
 start datetime: **25.01.23, 14:30**
 end datetime: **25.01.23, 20:45**

6.2. Hospitalization in private sector following ED visit of Example 1:

Insurance status

coverage type: **Private**
 start datetime: **25.01.23, 20:50**
 end datetime: **31.01.23, 14:15**