5.2.3.3 Complex and Extended Map from SNOMED CT Reference Sets

Purpose

A 447250001 | Complex map from SNOMED CT type reference set| supports the representation of maps where each SNOMED CT concept may map to one or more codes in a target scheme. This type of reference set supports the general set of mapping data required to enable a target code to be selected at run-time from a number of alternate codes. It supports target code selection by accommodating the inclusion of machine readable rules and/or human readable advice. An 609331003 | Extended map from SNOMED CT type reference set| adds an additional field to allow the categorization of maps.

Data structure

A 447250001 | Complex map from SNOMED CT type reference set| is an Integer - Integer - String - String - String - Component reference set. The pattern is currently used for the map to ICD-9-CM. Its structure is as shown in the following table, with one exception - the table below includes an additional field (mapCategoryId) which is not used for this type of map.

An 609331003 | Extended map type reference set (foundation metadata concept)| follows the same pattern but adds one additional column. It is an Integer - Integer - String - String - String - Component - Component reference set and this pattern is currently used for maps to ICD-10. Its structure is shown in the following table, and includes the mapCategoryId.

Table 5.2.3.3-1: Complex and Extended map from SNOMED CT type reference sets - Data structures

Field	Data type	Purpose	Mutable	Part of Primary Key
id	UUID	A 128 bit unsigned Integer, uniquely identifying this reference set member. Different versions of a *reference set member* share the same id but have different effectiveTime. This allows a *reference set member* to be modified or made inactive (i.e. removed from the active set) at a specified time.	NO	YES (Full /Snapshot)
effectiveTime	Time	The inclusive date or time at which this version of the identified reference set member became the current version. **Note**: In distribution files the effectiveTime should follow the short ISO date format (*YYYYMMDD*) and should not include the hours, minutes, seconds or timezone indicator. The current version of this reference set member at time *T* is the version with the most recent effectiveTime prior to or equal to time *T* .	YES	YES (Full) Optional (Snapshot)
active	Boolean	The state of the identified reference set member as at the specified effectiveTime . If active = 1 (true) the reference set member is part of the current version of the set, if active = 0 (false) the reference set member is not part of the current version of the set.	YES	NO
moduleId	SCTID	Identifies the SNOMED CT module that contains this reference set member as at the specified effectiveTime . The value must be a subtype of 900000000000443000 | Module (core metadata concept)| within the metadata hierarchy.	YES	NO
refsetId	SCTID	Identifies the reference set to which this reference set member belongs. In this case, a subtype descendant of: 447250001 | Complex map from SNOMED CT type reference set| or 609331003 | Extended map from SNOMED CT type reference set| .	NO	NO
referencedComponentId	SCTID	A reference to the SNOMED CT component to be included in the reference set. Refers to the SNOMED CT concept that is mapped to the other terminology or code system (i.e. the map source).	NO	NO
mapGroup	Integer	An Integer, grouping a set of complex map records from which one may be selected as a target code. Where a SNOMED CT concept maps onto 'n' target codes, there will be 'n' groups, each containing one or more complex map records.	YES	NO
mapPriority	Integer	Within a mapGroup, the mapPriority specifies the order in which complex map records should be checked. Only the first map record meeting the run - time selection criteria will be taken as the target code within the group of alternate codes.	YES	NO

mapRule	String	A machine-readable rule, (evaluating to either 'true' or 'false' at run-time) that indicates whether this map record should be selected within its mapGroup.	YES	NO
mapAdvice	String	Human-readable advice, that may be employed by the software vendor to give an end-user advice on selection of the appropriate target code from the alternatives presented to him within the group.	YES	NO
mapTarget	String	The target code in the target terminology, classification or code system.	YES	NO
correlationId	SCTID	A child of 1193546000 | Map source to map target correlation (foundation metadata concept)| in the metadata hierarchy, identifying the correlation between the SNOMED CT concept and the target code.	YES	NO
The following additional field only applies to 609331003 | Extended map type reference set|				
mapCategoryId	SCTID	Identifies the SNOMED CT concept in the metadata hierarchy which represents the MapCategory for the associated map member. The categories vary for different target code systems, each set of categories is represented by a subtype of 609330002 | Map category value| . In the case of ICD-10 the individual category values are subtypes of: 447634004 | ICD-10 map category value| .	YES	NO

Map Group, Priority and Rules

Values for mapGroup are allocated on a sequential basis (for each refsetId and referencedComponentId combination) during authoring starting at 1. However, distributed mapGroup are not necessarily sequential, as some mapGroup may be created and removed during a mapping process between releases. For maps where each SNOMED CT concept only maps to at most one of a group of alternate target codes, the mapGroup field are usually be set to '1'.

Values for mapPriority will be allocated on a sequential basis (within each map group) starting from '1'. For maps that do not require run - time alternatives, the mapPriority field is set to '1'.

The mapRule and mapAdvice fields enable run-time selection (within vendor's software) from a number of alternative map records within a mapGroup . Where there are no alternatives maps these columns of the release files will be empty (zero length string). Where alternative maps exist one or both of columns will be populated where relevant information is available.

Where both fields are populated, and a vendor's system is capable of processing a machine readable rule, this should take priority over the human readable advice. Where neither field is populated, a vendor's system should allow the end-user to select the appropriate target code from the alternates.

For more details on this topic in relation to the ICD-10 maps released as part of the SNOMED CT International Edition please see the ICD-10 Mapping Technical Guide

Mapping Rule Specifications

The specific grammar and content of the rules for resolving complex mapping cases depends on the nature of the target code system or classification. In general, each map is accompanied by a rule which is tested against other data and can be evaluated to return one of the following values:

- **True** - in which case the map target applies;
- **False** - in which case the map target does not apply;
- **Indeterminate** - in cases where there is insufficient accessible data to determine whether the map target applies. In this case manual resolution of the map using the map advice provided will be required.

The mapping rules assume access to a number of variables, that can be bound to appropriate attributes in the vendor's system information model. These include the age and gender of the patient and information about coexisting situations (e.g. records of other disorders, procedures or events in the same patient record).

Detailed definitions of the mapping rules used forms part of individual specifications for maps to particular target code systems and classifications. This will initially be provided separately and will accompany the release of the relevant mapping files. For example, the set of rules used for mapping to ICD-10 are included in the ICD-10 Mapping Technical Guide.

Metadata

The following metadata supports this reference set:

Table 5.2.3.3-2: Complex and Extended Map from SNOMED CT References Sets in the Metadata Hierarchy

```
900000000000454005 |Foundation metadata concept|
    900000000000455006 |Reference set|
        447250001 |Complex map from SNOMED CT type reference set|
        609331003 |Extended map from SNOMED CT type reference set|
```

Reference Set Descriptor and Example Data

Notes on the tables used to show descriptors and examples

The reference set example tables on this page have been revised as follows to aid clarity and understanding:

- The first four columns which are present in all release files are not shown. The omitted columns (id, effectiveTime, active, moduleId) are used in the same way in all referenced sets to support identification, versioning and packaging. They do not directly affect the specific features of a particular reference set or reference set type.
- Reference set columns that contain SNOMED CT identifiers are expanded to show details of the concept or description referenced by that identifier. In some cases, the term is shown in the same column using the expression syntax, in other cases an additional column with a name suffix '_term' has been added. In the standard reference set files only the identifier is present in the column and there is no added column for the term. When using reference sets, the term and other details of the component are looked up from the relevant component release files.

Descriptor Templates

The tables below examples of the descriptors for specific reference sets that follow the 447250001 | Complex map type reference set| and 609331003 Extended map type reference set| patterns.

Table 5.2.3.3-3: Refset Descriptor Rows for a Complex Map from SNOMED CT Reference Set

refsetId	referencedComponentId (Referenced component)	attributeDescription (Attribute description)	attributeType (Attribute type)	attributeOrder (Attribute order)
900000000000456007 | Reference set descriptor|	447563008 | SNOMED CT to ICD-9-CM equivalence complex map reference set|	900000000000500006 | Map source concept|	900000000000461009 | Concept type component|	0
900000000000456007 | Reference set descriptor|	447563008 | SNOMED CT to ICD-9-CM equivalence complex map reference set|	900000000000501005 | Map group|	900000000000478000 | Unsigned integer|	1
900000000000456007 | Reference set descriptor|	447563008 | SNOMED CT to ICD-9-CM equivalence complex map reference set|	900000000000502003 | Map priority|	900000000000478000 | Unsigned integer|	2
900000000000456007 | Reference set descriptor|	447563008 | SNOMED CT to ICD-9-CM equivalence complex map reference set|	900000000000503008 | Map rule|	900000000000465000 | String|	3
900000000000456007 | Reference set descriptor|	447563008 | SNOMED CT to ICD-9-CM equivalence complex map reference set|	900000000000504002 | Map advice|	900000000000465000 | String|	4
900000000000456007 | Reference set descriptor|	447563008 | SNOMED CT to ICD-9-CM equivalence complex map reference set|	900000000000505001 | Map target|	900000000000465000 | String|	5
900000000000456007 | Reference set descriptor|	447563008 | SNOMED CT to ICD-9-CM equivalence complex map reference set|	1193546000 | Map source to map target correlation|	900000000000461009 | Concept type component|	6

Table 5.2.3.3-4: Refset Descriptor Rows for an Extended Map from SNOMED CT type Reference Set

refsetId	referencedComponentId (Referenced component)	attributeDescription (Attribute description)	attributeType (Attribute type)	attributeOrder (Attribute order)
900000000000456007 | Reference set descriptor|	447562003 | SNOMED CT to ICD-10 complex map reference set|	900000000000500006 | Map source concept|	900000000000461009 | Concept type component|	0
900000000000456007 | Reference set descriptor|	447562003 | SNOMED CT to ICD-10 complex map reference set|	900000000000501005 | Map group|	900000000000478000 | Unsigned integer|	1
900000000000456007 | Reference set descriptor|	447562003 | SNOMED CT to ICD-10 complex map reference set|	900000000000502003 | Map priority|	900000000000478000 | Unsigned integer|	2
900000000000456007 | Reference set descriptor|	447562003 | SNOMED CT to ICD-10 complex map reference set|	900000000000503008 | Map rule|	900000000000465000 | String|	3
900000000000456007 | Reference set descriptor|	447562003 | SNOMED CT to ICD-10 complex map reference set|	900000000000504002 | Map advice|	900000000000465000 | String|	4

900000000000456007 | Reference set descriptor|	447562003 | SNOMED CT to ICD-10 complex map reference set|	900000000000505001 | Map target|	900000000000465000 | String|	5
900000000000456007 | Reference set descriptor|	447562003 | SNOMED CT to ICD-10 complex map reference set|	1193546000 | Map source to map target correlation|	900000000000461009 | Concept type component|	6
900000000000456007 | Reference set descriptor|	447562003 | SNOMED CT to ICD-10 complex map reference set|	609330002 | Map category value|	900000000000461009 | Concept type component|	7

Example Data

Table 5.2.3.3-5: Sample Content from an Extended Map from SNOMED CT Reference Set

refSetId	referencedComponentId (Map source)	mapGroup (Map group)	mapPriority (Map priority)	mapRule (Map rule)	mapAdvice (Map advice)	mapTarget (Map target)	correlationId (Map source to map target correlation)	mapCategoryId (Map category)
447562003 | ICD-10 complex map reference set|	127009 | Miscarriage with laceration of cervix|	1	1	TRUE	ALWAYS O03.8	O03.8	447561005 | SNOMED CT source code to target map code correlation not specified|	447637006 | Map source concept is properly classified|
447562003 | ICD-10 complex map reference set|	127009 | Miscarriage with laceration of cervix|	2	1	TRUE	ALWAYS O08.6	O08.6	447561005 | SNOMED CT source code to target map code correlation not specified|	447637006 | Map source concept is properly classified|
447562003 | ICD-10 complex map reference set|	140004 | Chronic pharyngitis|	1	1	IFA 90979004 | Chronic tonsillitis (disorder)|	IF CHRONIC TONSILLITIS CHOOSE J35.0 MAP OF SOURCE CONCEPT IS CONTEXT DEPENDENT	J35.0	447561005 | SNOMED CT source code to target map code correlation not specified|	447639009 | Map of source concept is context dependent|
447562003 | ICD-10 complex map reference set|	140004 | Chronic pharyngitis|	1	2	IFA 232406009 |Chronic pharyngeal candidiasis (disorder)|	IF CHRONIC PHARYNGEAL CANDIDIASIS CHOOSE B37.8 MAP OF SOURCE CONCEPT IS CONTEXT DEPENDENT	B37.8	447561005 | SNOMED CT source code to target map code correlation not specified|	447639009 | Map of source concept is context dependent|
447562003 | ICD-10 complex map reference set|	140004 | Chronic pharyngitis|	1	3	OTHERWISE TRUE	ALWAYS J31.2	J31.2	447561005 | SNOMED CT source code to target map code correlation not specified|	447637006 | Map source concept is properly classified|
447562003 | ICD-10 complex map reference set|	162004 | Severe manic bipolar I disorder without psychotic features|	1	1	TRUE	ALWAYS F31.1	F31.1	447561005 | SNOMED CT source code to target map code correlation not specified|	447637006 | Map source concept is properly classified|
447562003 | ICD-10 complex map reference set|	177007 | Poisoning by sawfly larvae|	1	1	TRUE	ALWAYS T63.4	T63.4	447561005 | SNOMED CT source code to target map code correlation not specified|	447637006 | Map source concept is properly classified|
447562003 | ICD-10 complex map reference set|	177007 | Poisoning by sawfly larvae|	2	1	TRUE	ALWAYS X25	X25	447561005 | SNOMED CT source code to target map code correlation not specified|	447637006 | Map source concept is properly classified|
447562003 | ICD-10 complex map reference set|	181007 | Hemorrhagic bronchopneumonia|	1	1	TRUE	ALWAYS J18.0	J18.0	447561005 | SNOMED CT source code to target map code correlation not specified|	447637006 | Map source concept is properly classified|
447562003 | ICD-10 complex map reference set|	183005 | Autoimmune pancytopenia|	1	1	TRUE	ALWAYS D61.8	D61.8	447561005 | SNOMED CT source code to target map code correlation not specified|	447637006 | Map source concept is properly classified|

Related Links

- ICD-10 Mapping Technical Guide