

# SNOMED CT To ICD-10-CM Map Release Notes

A collaborative project in healthcare information interoperability with  
the National Library of Medicine  
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## Amendment History

Version	Date	Editor	Comments
1.0	20120703	Kin Wah Fung	Final release notes of Phase 1 map
2.0	20130601	Kin Wah Fung	Release notes of updated map
3.0	20131220	Kin Wah Fung	Release notes of updated map
4.0	20140901	Kin Wah Fung	Release notes of updated map
4.1	20150225	Susan Roy, Kin Wah Fung	Release notes for 2015 March US Edition
5.0	20150630	Kin Wah Fung	Release notes for 20150901 version of the map
5.1	20150901	Kin Wah Fung, Susan Roy	Release notes for 2015 September US Edition
6.0	20160624	Kin Wah Fung	Release notes for 201603 version of the map
6.1	20161006	Kin Wah Fung	Release notes for 201609 version of the map
7.0	201702	Kin Wah Fung	Release notes for 201702 version of the map

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# 1 Purpose

This is an update of the SNOMED CT to ICD-10-CM Cross Map (herein referred to as ‘the MAP’). The MAP corresponds to the September 2016 release of the US Edition of SNOMED CT and the 2017 version of ICD-10-CM.

## 2 Audience for this document

All parties who wish to understand the MAP and/or to employ it for semi-automatic translation between SNOMED CT and ICD-10-CM should read this document. This may include vendors of electronic health records, terminology developers and managers.

## 3 Cross map content overview

### 3.1 Scope of publication

The MAP is a directed set of relationships from SNOMED CT source concepts to ICD-10-CM target classification codes. The SNOMED CT source domains for the MAP are limited to subtypes of 404684003 |clinical findings|, 272379006 |event| and 243796009 |situation with explicit context|.

This update of the MAP includes:

- 100,340 SNOMED CT source concepts including:
  - 94,995 clinical findings
  - 2,813 events
  - 2,532 situations with explicit context
- 5,705 source concepts could not be assigned a map target due to issues of ambiguity or target scope
- A total of 171,751 map records, with a maximum of 23 map records per map group

The SNOMED CT to ICD-10-CM mapping files can be downloaded as a standalone file. The files are contained in the RF2 folder:

The Human Readable Map – Documentation folder

Refset Descriptor Snapshot – Snapshot → Refset → Metadata

Extended Map Snapshot – Snapshot → Refset → Map

Module Dependency Snapshot – Snapshot → Refset → Metadata

## 3.2 What is a refset?

A Reference Set (refset) is a set of references to SNOMED CT components which may associate additional properties with members of the set. It may also indicate associations between members of the set or between members of the set and content of another nomenclature, classification or knowledge structure. The uses of Reference sets include identification of subsets of SNOMED CT content, representation of alternative hierarchical structures and cross maps to classifications. Reference Sets are a part of SNOMED CT Release Format 2 that provides a general purpose extensibility mechanism. Refsets are an IHTSDO standard artifact that complies with the technical specifications documented in the document *SNOMED CT Release Format 2.0 Reference Set Specifications*, accessible on line as part of the *Technical Implementation Guide*.

([http://doc.ihtsdo.org/download/doc\\_TechnicalImplementationGuide\\_Current-en-US\\_INT\\_20150131.pdf](http://doc.ihtsdo.org/download/doc_TechnicalImplementationGuide_Current-en-US_INT_20150131.pdf)).

This publication of the MAP employs a Descriptor refset, an Extended Map refset and a Module Dependency refset as documented in that publication.

## 3.3 RF2 refsets in this publication

The ICD-10-CM MAP is contained in three separate files. The MAP is identified by the refsetid 6011000124106.

- Refset Descriptor: contains metadata from the SNOMED CT metadata hierarchy (children of 9000000000000454005 [foundation metadata concept]) which describes the attributes of the publication refsets and their information content
- Module Dependency: designates the versions of other SNOMED CT modules upon which this publication of the MAP depends
- Extended Map: contains the core publication of MAP data. There are one or more map records for each source concept mapped, including the ICD-10-CM target codes.

## 3.4 Spreadsheet dataset for browsing

To support browsing and understandability of the MAP, a tab delimited UTF-8 dataset which can be imported into spreadsheet software such as Microsoft Excel® is included with the release. This can be loaded with the text import features of Excel and most spreadsheets. The spreadsheet data format mimics the exemplar appendices of the technical documentation and is a “readable” version of the map that can be understood by a non-technical individual. This file is not in RF2 format and can be found in the Documentation directory.

## 3.5 Technical documentation

Technical documentation which summarizes the rationale, procedures, technical artifacts and project overview is included with the publication as the pdf file: *Mapping SNOMED CT to*

ICD-10-CM 201603. Accompanying the technical documentation is a collection of sample maps available as Appendix\_icd\_10\_cm\_exemplar\_20160603.xlsx.

## 4 Publication history

<b>Publication effective date</b>	<b>Version</b>	<b>Overview and purpose</b>
2/29/2012	0.01	Preview publication of Phase 1 mapping data fit for publication 2/21/2012
7/6/2012	1.0	Final publication of the Phase 1 MAP
6/1/2013	2.0	Updated and expanded version of the MAP
12/20/2013	3.0	Updated and expanded version of the MAP
9/1/2014	4.0	Updated and expanded version of the MAP. This is the first release that is also published in the US Edition of SNOMED CT.
9/1/2015	5.0	Updated and expanded version of the MAP
3/1/2016	6.0	Updated and expanded version of the MAP
10/1/2016	6.1	MAP synchronized with September 2016 release of US Edition of SNOMED CT
2/1/2016	7.0	Updated and expanded version of the MAP

## 5 Quality assurance and maintenance

Mapping procedures as outlined in the technical documentation consist of dual independent mapping of all source concepts with map records sent to publication only after consensus of the independent mappers is reached. The MAP will be periodically updated with new versions

of SNOMED CT and ICD-10-CM. Future expansion of coverage of SNOMED CT concepts will depend on user feedback and availability of resources.

## 6 Queries and comments

Please send comments and questions about the MAP to Dr. Kin Wah Fung of the Lister Hill National Center for Biomedical Communications, National Library of Medicine.

## 7 Appendix: File format specifications

### 7.1 Refset Descriptor refset

(xder2\_cciRefSet\_DescriptorSnapshot\_INT\_yyyymmdd)

(der2 designates a data file of format RF2; cci denotes a Concept-Concept-Integer refset; INT identifies the international version; yyyymmdd is the year, month and date of publication)

Field	Data type	Purpose
id	UUID	A 128 bit unsigned integer, uniquely identifying the map category record
effectiveTime	Time	Specifies the inclusive date at which this change becomes effective.
active	Boolean	Specifies whether the member's state was active (=1) or inactive (=0) from the nominal release date specified by the effectiveTime field.
moduleId	SctId	Identifies the member version's module. Set to a child of 900000000000443000 Module  within the metadata hierarchy.
refSetId	SctId	Indicates that this is part of a "reference set descriptor"; concept Id 900000000000456007   Reference set descriptor reference set (foundation metadata concept)
referencedComponentId	SctId	The SCT identification of the refset which is described; a metadata descendant of 900000000000455006  Reference Set

Field	Data type	Purpose
attributeDescription	SctId	Set to a descendant of 900000000000457003  Reference set attribute  in the metadata hierarchy, that describes the additional attribute extending the reference set.
attributeType	SctId	A descendant of 900000000000459000  Attribute type  in the metadata hierarchy, that describes the type of the additional attribute extending the reference set.
attributeOrder	Integer	An unsigned integer, providing an ordering for the additional attributes extending the reference set. A zero value here is used for the row that describes the referenced component within the reference set. One additional active row exists for each attribute extending the reference set.



## 7.2 Module Dependency refset

(xder2\_ssRefSet\_ModuleDependencySnapshot\_INT\_yyyymmdd)

Field	Data type	Purpose
id	UUID	A 128 bit unsigned integer, uniquely identifying the map category record
effectiveTime	Time	Specifies the inclusive date at which this change becomes effective.
active	Boolean	Specifies whether the member's state was active (=1) or inactive (=0) from the nominal release date specified by the effectiveTime field.
moduleId	SctId	Identifies the member version's module. Set to a child of 900000000000443000 Module  within the metadata hierarchy.
refSetId	SctId	Set to one of the children of the 447250001  Complex map type  concept in the metadata hierarchy.
referencedComponentId	SctId	A reference to the module on which this module depends, a descendant of 900000000000443000 Module  in the metadata hierarchy.
sourceEffectiveTime	String	The effective time of the source module. This allows a specific module version to be selected as having a dependency. The effectiveTime must match exactly.
targetEffectiveTime	String	The effective time of the target module. This allows a specific module version to be selected as being the subject of a dependency. The effectiveTime must match exactly.

### 7.3 Extended Map refset (xder2\_iissscRefset\_ExtendedMapSnapshot INT\_yyyymmdd)

Field	Data type	Purpose
id	UUID	A 128 bit unsigned integer, uniquely identifying the map record
effectiveTime	Time	Specifies the inclusive date at which this change becomes effective.
active	Boolean	Specifies whether the member's state was active (=1) or inactive (=0) from the nominal release date specified by the effectiveTime field.
moduleId	SctId	Identifies the member version's module. Set to a child of 900000000000443000 Module  within the metadata hierarchy.
refSetId	SctId	Set to one of the children of the  Complex map type  concept in the metadata hierarchy.
referencedComponentId	SctId	The SNOMED CT source concept ID that is the subject of the map record.
mapGroup	Integer	An integer identifying a grouping of complex map records which will designate one map target at the time of map rule evaluation. Source concepts that require two map targets for classification will have two sets of map groups.
mapPriority	Integer	Within a map group, the mapPriority specifies the order in which complex map records should be evaluated to determine the correct map target.
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 map group

Field	Data type	Purpose
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. This includes a) a summary statement of the map rule logic, b) a statement of any limitations of the map record and c) additional classification guidance for the coding professional.
mapTarget	String	The target ICD-10 classification code of the map record.
correlationId	SctId	A child of  Map correlation value  in the metadata hierarchy, identifying the correlation between the SNOMED CT concept and the target code.
mapCategoryId	SctId	Identifies the SNOMED CT concept in the metadata hierarchy which is the MapCategory for the associated map record. This is a subtype of 447634004  ICD-10 Map Category value .

## 7.4 Map browser spreadsheet (tls\_ICD10HumanReadableMap\_INT\_yyyymmdd)

The browser spreadsheet dataset is the same as the Extended Map Refset with the descriptive names for the SNOMED CT concept, ICD-10-CM code and mapCategoryId added for readability.

Field	Data type	Purpose
id	UUID	A 128 bit unsigned integer, uniquely identifying the map category record
effectiveTime	Time	Specifies the inclusive date at which this change becomes effective.
active	Boolean	Specifies whether the member's state was active (=1) or inactive (=0) from the nominal release date specified by the effectiveTime field.
moduleId	SctId	Identifies the member version's module. Set to a child of 900000000000443000 Module  within the metadata hierarchy.
refSetId	SctId	Set to one of the children of the  Complex map type  concept in the metadata hierarchy.
referencedComponentId	SctId	The SNOMED CT identifier of the source concept that is being mapped in this record
sctName	String	The fully specified name of the SNOMED CT source concept being mapped
mapGroup	Integer	A collation identifier which specifies one or more map records which are to be evaluated in sequence for determination of at most one ICD-10 target codes for this map
mapPriority	integer	The sequence number for evaluation of this map record within the map group
mapRule	string	The map rule for this map record
mapAdvice	string	The map advice for this map record

Field	Data type	Purpose
mapTarget	string	Target ICD-10 classification code for this map record
icdName	string	WHO term assigned to the target ICD-10 code for this record
mapCategoryValueId	SctId	The metadata identifier for the map category assigned to this map record, a child of 447634004  ICD-10 map category value
mapCategoryValue	string	Primary term for the map category metadata assigned to this map record