Closer Look: the SNOMED Clinical Terms to ICD-9-CM Mapping

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In the July/August 2001 Journal of AHIMA*, "SNOMED Takes the Next Step" describes the terminology's structure, use in electronic patient records, the evolutions from SNOMED® RT and an overview of the mappings of SNOMED® CT. This article is an update on SNOMED, with a closer look at the mapping file structure of the new SNOMED Clinical Terms First Release.*

The SNOMED® Clinical Terms (SNOMED CT) to ICD-9-CM mapping consists of correlates between SNOMED CT concepts in the diseases and general patient finding hierarchies and the closest ICD-9-CM target code or codes. The mapping provides users with an approximation of the closest ICD code or codes. However, the mapping table is not intended for direct billing or reimbursement activities without additional authoritative review. These classifications are used for data aggregation and analysis and are used by healthcare systems and services around the world.

The SNOMED to ICD-9-CM cross mapping uses the 2001-updated version of ICD-9-CM. It includes all the SNOMED RT Release 1.1 terms and added disease and disorder terms from the United Kingdom Clinical Terms Version 3 Terminology. Also included in SNOMED CT First Release are cross mappings for SNOMED CT to ICD-O-3 (used by tumor registries), and SNOMED CT to ICD 10, which is used by the NHS (National Health Services) in the U.K. and in other countries.

SNOMED Mapping Methodology

The cross mapping scheme is designed to support automated cross mapping (in future releases) by striving for one-to-one mappings when possible and by providing a technical schema that supports rule-based processing.[1]

The mapping is supported by three interrelated cross mapping tables:

- Cross Maps Sets Table: The table contains general information about each cross mapping, such as the name of the target scheme and the version that was used for the cross mapping
- Cross Maps Table (Maps Table): This table contains the identifier for the SNOMED CT concept and a link to another table that contains the relevant target code such as ICD-9-CM
- Cross Maps Target Table: This table contains the target codes, such as ICD-9-CM

Categorization Methodology

The cross maps table contains the categorization methodology that provides further information about the characteristics of the map found in the map advice field. The methodology is as follows:

0 = Unmappable. SNOMED term cannot be assigned to an appropriate ICD-9-CM code.
1 = One-to-one SNOMED to ICD map. The SNOMED and ICD correlates are identical or synonyms.
2 = Narrow to Broad SNOMED to ICD map. The SNOMED source code is more specific than the ICD target code.
3 = Broad to Narrow SNOMED to ICD map. The SNOMED code is less specific than the ICD target code. Additional patientinformation and rules are necessary to select an appropriate mapping.
4 = Partial overlap between SNOMED and ICD. Overlap exists between correlates, and additional patient information and rules are necessary to select an appropriate mapping.

Whenever possible, the ICD code or codes with the highest level of specificity have been selected. Terms that cannot be assigned to an appropriate ICD-9-CM code or codes are considered unmappable.

Sample Map in SNOMED CT

As an example, let's look at the one-to-one mapping from the SNOMED CT concept Sunburn of Second Degree to the ICD-9-CM category represented by the code 692.76. This concept is active in the SNOMED CT concepts table. The concepts table contains information about each concept in the terminology. It contains a unique numeric identifier for each concept in the terminology, a unique fully specified name, and references to the predecessor works. (See "Concepts Table" below).

Cross Maps Sets Table

The relevant classification is ICD-9-CM. Map Set Type = 2 means this is a multiple map in which each unique SNOMED concept maps to either one target code or a set of target codes. The SNOMED concept is never duplicated in more than one row; that is, each concept has only one map. However, that map can contain more than one target code. (See "Cross Maps Sets Table" below).

Cross Maps Table (Maps Table)

The map target ID field identifies the row in the targets table with the target codes for this SNOMED concept. The map advice field contains a value of 1 as the categorization methodology, which, for this SNOMED to ICD-9-CM mapping, means a 1:1 mapping. The map advice value means this is a one-to-one map. (See "Cross Maps Table (Maps Table)" below).

Cross Maps Target Table (Target Table)

The target codes are an approximation of the closest ICD-9-CM codes or codes (692.76) that best represent the SNOMED concept. (See "Cross Maps Target Table" below).

The evolution of clinical terminologies such as SNOMED CT opens the doors to many new and growing opportunities for HIM professionals to use a codified clinical terminology in the management of patient health records. Management of the relationships between a granular clinical terminology such as SNOMED CT and the broad based classifications systems such as ICD-9-CM that are commonly used for billing and administrative activities will provide growing challenges for the HIM professional and the opportunity to develop new skills sets.

Note

1. This material is taken from SNOMED® Clinical Terms First Release Technical Implementation Guide. ©2002, College of American Pathologists. All Rights Reserved. SNOMED® is a registered trademark of the College of American Pathologists.

Reference

Kudla, Karen, and Margo Blakemore. "SNOMED Takes the Next Step." *Journal of AHIMA* 72, no. 7 (2001): 62-68.

Editor's note: Under an agreement with SNOMED, the AHIMA coding staff is reviewing a five percent sample of SNOMED RT terms. The sample of SNOMED RT terms have been divided in half, with two reviewers mapping the same set of concepts, and results compared, and any variances reviewed and resolved by the AHIMA coding team, and the final mapped codes and category assignments evaluated against the SNOMED mapped codes and category assignments, and any variances analyzed and resolved. Results from this study will be published in an upcoming issue of the Journal.

SNOMED Mapping Tables

Concepts Table				
Concept ID	*Concept Status*	*Fully Specified Name*	*CTV3ID*	*SNOMEDID*

| 200834004 | 0 | Sunburn of second degree | M1276 | DD-10319 |

Cross Maps Sets Table

Map Set ID	Map Set Name	Map Set Type	Map Set Scheme ID	Map Set Scheme Name	Map Set Scheme Name	Map Set Realm ID*	Map Set Separator	Map Set Rule Type*
100046	ICD-9-CM Map	2		International Classification of Diseases and Related Health Problems, 9th Revision, Clinical Modifications.	2001		| | |	

Cross Maps Table (Maps Table)

Map Set ID	Map Concept ID	Map Option*	Map Priority*	Map Target ID	Map Rule*	Map Advice
100046	200834004			23561051		1

Cross Maps Target Table

Target ID	Target Scheme ID	Target Codes	Target Rule*	Target Advice*
23561051	ISO7963	692.76		

*Not currently used in SNOMED® CT version 1.0. For future use.

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Article citation:

Imel, Margo. "A Closer Look: the SNOMED Clinical Terms to ICD-9-CM Mapping." *Journal of AHIMA* 73, no.6 (2002): 66-69.

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