



Stage 2 EHR Certification: NLM Vocabulary Update

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Proposed Stage 2 certification criteria

- **SNOMED CT – problem list
- *LOINC – laboratory tests
- *RxNorm – medications, med. allergies
- CVX – vaccines
- OMB Standard – race & ethnicity
- ISO 639-1:2002 – preferred language
- ICD-10-CM – cause of death
- **ICD-10-CM or ICD-9-CM – encounter diagnosis
 - * today's focus

Problem list

- Target: SNOMED CT (SCT)
- Issue: Rate/speed of new content additions
 - IHTSDO actions:
 - Selection/training of Consultant Terminologists
 - Initial 5 last year (includes Jim Case, NLM)
 - [Applications for next group due March 2, 2012](#) (see <http://www.ihtsdo.org>)
 - Distributed editing –
 - [1st step: Feb. 2012](#): consultant terminologists can edit Int. Release directly
 - Gradual expansion to other consultant terminologists & vetted editors
 - NLM actions:
 - US extension to SNOMED CT [Next release March 2012](#)
 - US SNOMED CT Content Request System [New version Feb 2012](#)

Problem list

- Target: SNOMED CT (SCT)
- Assets available from NLM (US Member of IHTSDO)
 - SCT International Release (in English & Spanish)
 - SCT problem subsets
 - CORE (frequently seen) problems subset
 - Nursing problem list subset
 - US extension to SCT [next release Mar 2012](#)
 - KP Convergent Medical Terminology (CMT) problem subsets
(6 to date, 13,000+)
 - Download site for all content sets
 - UMLS-enhanced API access to SCT [new version Mar 2012](#)
 - SCT web browser



U.S. SNOMED CT Content Request System (USCRS)

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What's New**January 20, 2012**

USCRS moved from "beta" to production with improved workflow and new features.

Email notification of request changes is now available.

Enable/disable email notifications from new menu option "My Settings."

"Destination Terminology" field added to Add Parent, Add Relationship and Change Relationship request templates.

Recent Requests**Request 1 .. 10 of 100**

Batch Id	Request Id	Topic	Request Type	Status	Submitted On	Last Modified	Summary	Actions
41271	41529	Finding	New Concept	Accepted	Feb 26, 2012	Feb 27, 2012	Vision below test threshold (finding)	
41273	41531	laboratory finding/ Microbiology	New Concept	New	Feb 27, 2012	Feb 27, 2012	Campylobacter jejuni(hippurate negative) or Campylobacter coli (organism)	
41273	41530	laboratory finding/ Microbiology	New Concept	New	Feb 27, 2012	Feb 27, 2012	Aeromonas or Plesiomonas species (organism)	
41271	41528	Observable	New Concept	New	Feb 26, 2012	Feb 26, 2012	Number of additional letters seen (observable entity)	
41271	41527	Observable	New Concept	New	Feb 26, 2012	Feb 26, 2012	Number of letters missed (observable entity)	
..

Summary

All Requests: 7090

My Requests:

Submitted: 0Accepted: 0Approved: 0Draft: 0**Important Dates****January 31, 2012**SNOMED CT
International release**March 2012**U.S. Extension to
SNOMED CT next
release (est.)

Problem list

- Target: SNOMED CT (SCT)
- Issue: Transition from use of ICD-9-CM for problems
 - Available from IHTSDO:
 - Conceptual mapping FROM SCT TO ICD-9-CM
 - Available from NLM:
 - Synonymous mappings in UMLS Metathesaurus
 - [April 2012](#): Trial map for evaluation
 - FROM heavily used ICD-9-CM (based on CMS data) TO SCT
 - » ~40% will NOT be 1-to-1 mappings

Problem list

- Target: SNOMED CT (SCT)
- Issue: Use of SCT to generate encounter diagnoses (in ICD-10-CM or ICD-9-CM) for billing/statistics
 - Available from IHTSDO:
 - Conceptual mapping from SCT to ICD-9-CM
 - Available from NLM:
 - Synonymous mappings in UMLS Metathesaurus
 - Old (2008) rule-based map FROM SCT subset TO ICD-9-CM
 - ?? Is it a priority to update /improve this??
 - **NEW:** FROM SCT subset to ICD-10-CM, with demonstration tool
 - **TODAY:** From 7,277 SCT concepts
 - June 2012: Complete initial map. From ~15,000 SCT concepts
 - » Leverages procedures, data & tools from the IHTSDO and UK NHS Terminology Centre and data from Kaiser Permanente's CMT donations

The I-MAGIC (Interactive Map-Assisted Generation of ICD Codes) Algorithm utilizes the SNOMED CT to ICD-10-CM Map in a real-time, interactive manner to generate ICD-10-CM codes. This demo simulates a problem list interface in which the user enters problems with SNOMED CT terms, which are then used to derive ICD-10-CM codes using the Map.

Name:



Gender:



Date of Birth:

Problem List (SNOMED-CT terms)

What's wrong with the patient? Please add problem(s) here. (Hint: type 'dizzy')

Action	SNOMED-CT Name
Add	Problem: <input type="text"/>

(Only SNOMED CT terms included in the published SNOMED CT to ICD-10-CM Map are shown.)

Update List

Get ICD Codes

Add Complex Examples:



Kin Wah Fung [Contact Us](#)

[Lister Hill National Center for Biomedical Communications](#), [U.S. National Library of Medicine](#)

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[USA.gov](#), [Copyright](#), [Privacy](#), [Accessibility](#), [Freedom of Information Act](#)

I-MAGIC

| Instructions | Demo |

The I-MAGIC (Interactive Map-Assisted Generation of ICD Codes) Algorithm utilizes the SNOMED CT to ICD-10-CM Map in a real-time, interactive manner to generate ICD-10-CM codes. This demo simulates a problem list interface in which the user enters problems with SNOMED CT terms, which are then used to derive ICD-10-CM codes using the Map.

Name: Gender: Date of Birth:

Mapping Problems to ICD-10-CM

SNOMED-CT	ICD-10-CM Code	ICD-10-CM Name	Optional refinement
Carcinoma in situ of breast (189336000)	D05 . 90	Unspecified type of carcinoma in situ of unspecified breast	<input type="button" value="Laterality"/>
Anemia in ovarian carcinoma (307726001)	C56 . 9	Malignant neoplasm of unspecified ovary	<input type="button" value="Laterality"/>
	D63 . 0	Anemia in neoplastic disease	
Mild depression (310495003)	F32 . 0	Major depressive disorder, single episode, mild	
Failure to gain weight (36440009)	R62 . 7	Adult failure to thrive	
Herniated urinary bladder (410070006)	N81 . 10	Cystocele, unspecified	

Medications, medication allergies

- Target: RxNorm
- Assets available from NLM:
 - RxNorm – monthly – complete release
 - RxNorm – weekly – drugs newly approved by FDA
 - RxNorm Current US Prescribable Subset
 - RxTerms interface terminology for orders, medication lists
 - RxNav browser, API
 - ?? What else needed to support MU??

Medications, medication allergies



RxNorm API Reference

This section contains the design details of the RxNorm API. Each function contains a description, the inputs to the function, the outputs from the function and examples. Available functions:

Function	Description
findRxcuiByString	Search by name to find RxNorm concepts
findRxcuiById	Search by identifier to find RxNorm concepts
getSpellingSuggestions	Return spelling suggestions for a name
getRxConceptProperties	Return the concepts properties
getRelatedByRelationship	Return the related concepts of specified relationship types
getRelatedByType	Return the related concepts of specified term types
getAllRelatedInfo	Return all related concept information
getDrugs	Return the related drugs
getNDCs	Return all National Drug Codes (NDC) for a concept
getRxNormVersion	Return the RxNorm data set version
getIdTypes	Return the available identifier types
getRelaTypes	Return the available relationship types
getSourceTypes	Return the available vocabulary abbreviated source types
getTermTypes	Return the available term types
getProprietaryInformation	Return the proprietary information for a concept
getMultiInaredBrand	Return the brands containing the specified ingredients

Tests and measures

- Target: LOINC
- Assets available (from Regenstrief Institute):
 - LOINC (in multiple languages)
 - Top 2000+ Lab Observations & Mapper's Guide
 - Common Lab Orders Value Set
 - Subsets for Test Panels & Assessment Forms (including CMS survey instruments)
 - RELMA tool - searching (in multiple languages) & mapping
 - ??Other high priority convenience subsets??
 - ??API use cases beyond code/term resolution??

Discussion

Other activities that could promote/support MU of SNOMED CT, RxNorm, LOINC?

- Additional high priority convenience subsets?
 - API use cases?
 - Use of subsets in certification?

Future Topic

Value set creation, validation, maintenance,
dissemination

Selected NLM Contacts-

<https://ned.nih.gov/search/search.aspx>

- SNOMED CT – Jim Case
- SNOMED CT subsets, mappings – Kin Wah Fung, Vivian Auld
- NLM-IHTSDO interface – Vivian Auld, Jan Willis
- UMLS/SCT APIs, downloads, browsers – Suresh Srinivasan
- LOINC content, subsets – Clem McDonald
- NLM-Regenstrief interface – Vivian Auld
- RxNorm – Stuart Nelson, John Kilbourne
- RxTerms – Kin Wah Fung
- RxNav browser, drug terminology/info APIs – Olivier Bodenreider
- NLM vocabulary services customer support – Steve Emrick