

**UMLS KNOWLEDGE SOURCES**  
**13th Edition - Fall Release**  
**2002AD Addendum to 2002AA Documentation**

## **0. Introduction**

This is the 2002AD documentation addendum to the 2002AA documentation. Changes to the documentation due to addition or deletion of new content in 2002AD are outlined here. Section 0.1a outlines what is new in the current release. The *What's New* section for previous releases follow in Section 0.1b, 0.1c, etc.. Some sections, like [Section 6](#) (Content of CD-ROMS), [Section B.2](#) (Source Abbreviations), [Section B.3](#) (String Count by Source), [Section B.5](#) (Precedence) and [Section B.6](#) (Relationship Attributes), are shown in their entirety since there are significant changes to these sections with each release.

As an addendum, the content is presented in the order of the January (2002AA) documentation with the same section numbers and structure.

During the year, announcements concerning the UMLS project are made to the umls-users group. Anyone can subscribe to this discussion list. To subscribe to the listserver, simply send a message to listserver@nlm.nih.gov which includes the following line:

subscribe umls-users

## **0.1a What's New for 2002AD UMLS**

### **0.1a.0 Introduction**

The UMLS Knowledge Sources are now released quarterly. The Fall 2002 release is named 2002AD; the Summer release was called 2002AC; and so on. When necessary, releases may become even more frequent; it will be up to each user to decide how frequently to load new updates. This *What's New* section will help a user decide by outlining changes present in a new release.

### **0.1a.1 Metathesaurus**

The 2002AD edition of the Metathesaurus includes 873,429 concepts and 2.10 million concept names in its source vocabularies. Comparing 2002AD to 2002AC, there are 2576 more concepts; 10,554 more names in MRCON; and 13,913 more names in MRSO.

Five sources were updated for the 2002AD release – ICD9CM, International Classification of Diseases, 2003; MSH, Medical Subject Headings (MeSH 2003), August 14, 2002; PDQ, Physician Data Query, July 2002; SPN,

Standard Product Nomenclature, 2002; and UMD, Universal Medical Device Nomenclature System, 2002.

### *New possible value for Term Status (TS) in MRCON*

In MetamorphoSys, it is possible to make selected Sources (SABs) and Term Types (TTYs) suppressible. Under some circumstances, the selection may include the preferred form of the preferred term. In that case, the Term Status is now set to 'p' (lowercase p) to indicate that the preferred form is suppressible.

This situation may cause problems for users' programs in cases where the new value is not anticipated. MetamorphoSys itself will now handle the new value correctly, so its output can become the input for another run. See TS - Term Status in [Appendix B.1.1](#) for further information about this data element.

### *Added (last) field in MRCUI: MAPIN*

To add to the usefulness of MRCUI when CUIs are not found, a new attribute 'MAPIN' has been added as the last field in MRCUI with Values 'Y' or 'N' or null. Initially all values are 'Y' for mapped rows; as concepts are excluded with MetamorphoSys, their references have MAPIN set to 'N' indicating that this CUI was excluded.

### *New MRSAB file: metadata about Metathesaurus Sources*

Starting with 2002AD, the UMLS Metathesaurus has "versionless" or "root" Source Abbreviations (SABs) in the MR files. In each case, there is a link in MRSAB from the "versionless" SAB to fully specified version information for the current release. MetamorphoSys can produce files with either the root or versioned SABs so that either form can be utilized by a user.

For example, the released SAB for MeSH is now simply "MSH". In MRSAB, you will find the current versioned SAB is MSH2003\_2002\_08\_14.

The major advantage of this change is that all MR file rows which represent information which has not changed between versions will also be unchanged, making an update model, using row updates, much simpler and smaller.

-- Detailed description of MRSAB:

There is one row in this file for every version of every source in the current Metathesaurus; when complete, there will also be historical information with a row for each version of each source that has appeared in any Metathesaurus release.

This table allows mapping from Root (versionless) source names and abbreviations (SABs) to versioned ones; the Versioned source name row has the corresponding versionless names. Note that the field CURVER has the value 'Y' to identify the version in this Metathesaurus release. Future releases of MRSAB will also contain historical version information in rows with CURVER value 'N'.

MRSAB allows all other Metathesaurus files to use versionless source abbreviations, so that all rows with no data change between versions also remain unchanged. Note also that those who prefer versioned SABs may elect to have them as an output option in MetamorphoSys.

The full structure of MRSAB is as follows:

<b>Field</b>	<b>Full Name</b>	<b>Description</b>
--------------	------------------	--------------------

VCUI	CUI	CUI of the versioned SRC concept for this source
RCUI	Root CUI	CUI of the root SRC concept for this source
VSAB	Versioned Source Abbreviation	The versioned source abbreviation for this row e.g. MSH2003_2002_08_14
RSAB	Root Source Abbreviation	The root source abbreviation for this row e.g MSH
SON	Official Name	The official name for a source
SF	Source Family	The Source Family for a source
VER	Version	The source version e.g. 2001
MSTART	Meta Start Date	The date this source became active, e.g. 2001_04_03
MEND	Meta End Date	The date this source ceased to be active, e.g. 2001_05_10
IMETA	Meta Insert Version	The version of the Metathesaurus source appeared, e.g.2001AB
RMETA	Meta Remove Version	The version of the Metathesaurus source disappeared, e.g.2001AC
SLC	Source License Contact	The license contact information
SCC	Source Content Contact	The source content contact information
SRL	Source Restriction Level	0,1,2,3
TFR	Term Frequency	The number of terms for this source in MRCON/MRSO, e.g., 12343
CFR	CUI Frequency	The number of CUIs associated with this source, e.g. 10234
CXTY	Context Type	The type of context (per section 2.3.2) from the UMLS documentation
TTYL	Term Type List	Term-type list from source , e.g. MH,EN,PM,TQ
ATNL	Attribute Name List	The attribute name list (from MRSAT), e.g., MUI,RN,TH,...
LAT	Language	The language of the source
CENC	Character Encoding	Character set as specified by the IANA official names for character assignments <a href="http://www.iana.org/assignments/character-sets">http://www.iana.org/assignments/character-sets</a>
CURVER	Current Version	A Y or N flag indicating whether or not this row corresponds to the current version of the named source
SABIN	Source in Subset	A Y or N flag indicating whether or not this row is represented in the current MetamorphoSys subset. Initially always Y where CURVER is Y, but later is recomputed by MetamorphoSys.

*Revised Concept Structure for Source Concepts (SRC):*

In conjunction with the change to releasing versionless SABs and MRSAB, we have overhauled the "SRC" or "Metathesaurus Source Terminology Names" source. Each SAB will now have two or more related concepts with distinct meanings: one versionless or "root" concept and at least one versioned concept. We have introduced

new term types to further distinguish these concepts:

SSN: source short name, used in the UMLS Knowledge Sources Server

RPT: root preferred term

RHT: root hierarchical term

RAB: root abbreviation

RSY: root synonym

VPT: versioned preferred term

VAB: versioned abbreviation

VSY: versioned synonym

For example, the root MeSH concept contains the following SRC names:

<b>STR</b>	<b>SAB</b>	<b>TTY</b>	<b>CODE</b>
MSH	SRC	RAB	V-MSH
Medical Subject Headings	SRC	RPT	V-MSH
MeSH	SRC	RHT	V-MSH
MeSH	SRC	SSN	V-MSH

The versioned MeSH concept looks like this:

<b>STR</b>	<b>SAB</b>	<b>TTY</b>	<b>CODE</b>
Medical Subject Headings, 2002_08_14	SRC	VPT	V-MSH2003_2002_08_14
MSH2003_2002_08_14	SRC	VAB	V-MSH2003_2002_08_14

The hierarchy treetop will always be the root concept. There will always be a `has_version/version_of` relationship between the root and versioned concepts. There may also be `has_translation/translation_of` relationships between the root concepts for English-language sources and their non-English translations.

### *RxNorm*

This release continues the creation and refinement of concepts to support the RxNorm Project. These concepts relate the names of orderable medications to a dose forms from a set proposed by the HL7 Vocabulary Technical Committee as a value set, and the components of those medications. For further discussion, see the article at:

<http://umlsinfo.nlm.nih.gov/RxNorm.html>

### *MetamorphoSys*

For 2002AD, MetamorphoSys was updated with some new features. One important new feature is the ability to handle versioned and versionless SABs. Other new features include:

- 4 new filters to aid in customization
  - Attributes - removes selected attributes from subset
  - Language - removes terms from selected languages
  - Relationships - removes selected relationship types from subset
  - Semantic Types - removes concepts that contain selected semantic types
- Users can create their own custom filters to use with the MetamorphoSys interface
- Redo/Undo capability
- The Output/Input formats can vary with richer format options coming in future releases
- The log file contains more information on the criteria a user selected
- User can run MetamorphoSys in batch mode or with the Graphical User Interface

For more information, please consult the README\_MMS.txt file contained in the 2002AD release.

### **0.1a.2 Semantic Network**

A new Semantic Type was added in 2002AD - Drug Delivery Device (TUI T203, STN A1.3.1.1). It is a child of Medical Device. A new relationship attribute (REL RO and RELA contains) relates Drug Delivery Device to the Clinical Drugs contained within. This new type is used in RxNorm.

In previous versions, SRFIL has stated that SRDEF contained 7 fields. SRDEF actually has 10 fields and this version of SRFIL was corrected to reflect this.

### **0.1a.3 SPECIALIST Lexicon and Lexical Programs**

These changes were made to fix earlier errors with the LEX content.

1. The file LRWD has a final "|" added on each line.
2. In LRFIL, the row for LRFLD has the NAM column changed to COL.  
Also, the row for LRPRN no longer has the PRS column.

### **0.1a.4 UMLS Knowledge Source Server**

There is a new version of the UMLS Knowledge Source Server. To find out more about the new features, please go to:

<http://umlsks.nlm.nih.gov>

This page has a section on What's New and a link to a FAQ page. For users already registered, there is documentation describing the changes once in the system.

### **0.1b What's New for 2002AC UMLS**

## **0.1b.0 Introduction**

The UMLS Knowledge Sources are now released quarterly. The Spring 2002 release was named 2002AB; the Summer release is called 2002AC; and so on. When necessary, releases may become even more frequent; it will be up to each user to decide how frequently to load new updates. This What's New section will help a user decide by outlining changes present in a new release.

### **0.1b.1 Metathesaurus**

The 2002AC edition of the Metathesaurus includes 870,853 concepts and 2.27 million concept names in its source vocabularies. Comparing 2002AC to 2002AB, there are 731 fewer concepts primarily due to synonymy work done with the RxNorm Project; 11,643 more names in MRCON; and 11,063 more names in MRSO.

Five sources were updated for the 2002AC release – AOD2000, Alcohol and Other Drug Thesaurus; CSP2002, Computer Retrieval of Information on Scientific Projects (CRISP); LNC205, LOINC version 2.05; MDR50, Medical Dictionary for Regulatory Activities Terminology (MedDRA) version 5.0; and MSH2002\_06\_01, Medical Subject Headings (MeSH) June 01, 2002.

The SCD column in MRCXT, MRSAT and MRSO was renamed CODE due to a potential conflict with the new Term Type SCD for the RxNorm project. SCD is now a Term Type for NLM02 and CODE represents the column for “Unique identifier or code for an entry in the source vocabulary.”

MRCUI is a historical file tracking all CUIs that have been in past Metathesaurus releases and are not in the current release. This file makes better use of the information contained in MERGED.CUI and DELETED.CUI. These files exist for users who have used them in the past but all the information in these files is now contained in MRCUI. MRCUI is actually better because for some CUIs in DELETED.CUI it will provide bequeathal relationships which may allow users to make better use of old CUIs.

## **0.1c What's New for 2002AB UMLS**

### **0.1c.0 Introduction**

The UMLS Knowledge Sources are now released quarterly. This Spring 2002 release is named 2002AB; the Summer release will be called 2002AC; and so on. When necessary, releases may become even more frequent; it will be up to each user to decide how frequently to load new updates. This What's New section will help a user decide by outlining changes present in a new release. 0.1b.1 Metathesaurus

The 2002AB edition of the Metathesaurus includes 871,584 concepts and 2.10 million concept names in its source vocabularies. There are 94,644 more concepts; 142,338 more names in MRCON; and 151,870 more names in MRSO.

There are three new sources for the 2002AB release- NCBI2001, Taxonomy from National Center for Biotechnology Information; NLM02, RxNorm work done by the National Library of Medicine; and NLM03, RxNorm relationship work done by the National Library of Medicine.

Three sources were updated for the 2002AB release – INS2002, French translation of MeSH; MDR41, Medical Dictionary for Regulatory Activities Terminology (MedDRA) version 4.1; and MSH2002\_02\_10, Medical Subject Headings (MeSH) February 10, 2002.

VANDF01 now has a Restriction Level of 0.

MTHMSTFRE and MTHMSTITA now have a Restriction Level of 0. The file sizes in MRFILES now show the correct sizes for each format (note that ISO/PC text files have one more character per line than Unix text files).

### *Problems Identified in 2002AA Release and Repaired for 2002AB Release*

#### 1. 2002AA MRCXT ICPC2E/ICPC2P Problem

##### I. Problem

There are two problems in the 2002AA MRCXT that affect International Classification of Primary Care, Version 2-Plus (ICPC2P) and International Classification of Primary Care, 2nd ed. Electronic form (ICPC2E). First, there are a number of incomplete contexts present containing only the second level ANC row (typically with context numbers 3 or 4) without the higher or lower ANC rows, and without any CCP, SIB, or CHD rows.

For example,

```
C0000731|S0351958|ICPC2P|D25|3|ANC|2|Symptoms and Complaints Component|C0497525|1|||
```

Second, there are a number of contexts attributed to ICPC2E that have "ICPC2-Plus" as the context tree-top.

For example,

```
C0000731|S0351958|ICPC2E|D25|4|ANC|1|ICPC2-Plus|C0848024|||  
C0000731|S0351958|ICPC2E|D25|4|ANC|2|DIGESTIVE|C0521361|D|||  
C0000731|S0351958|ICPC2E|D25|4|CCP||ABDOMINAL DISTENSION|C0000731|D25||+|  
... CHD rows not shown ...
```

##### II. Scope

These errors affect only ICPC2P and ICPC2E MRCXT data.

The first problem affects about 2500 rows of MRCXT and the second problem affects another 23,000 rows. In total, about 2500 "contexts" are affected (where a "context" is a CUI,SUI,SOC,SCD,CXN tuple).

These problems will cause a failure to correctly display these 2500 contexts.

Additionally, exceptions will occur in applications that expect the complete ANC tree to be available for contexts represented in MRCXT.

## 2. MetamorphoSys 2002AA Configuration File Problem

### I. Problem

There is a bug in the configuration file distributed with MetamorphoSys that affects the ability of the user to configure both the precedence and suppressibility of LOINC term types. This does not affect the ability of the user to exclude the entire LOINC vocabulary from using MetamorphoSys.

### II. Scope

This problem is limited to a users' ability to change the precedence and suppressibility within LOINC. Other sources are not affected.

## 3. MRXNS.ENG, MRXNW.ENG Problem

### I. Problem

The version of LVG used to compute the MRXNW.ENG and MRXNS.ENG files was slightly different from the version distributed with the 2002AA UMLS, causing small variations in the normalized forms of some strings in MRCON.

### II. Scope

A total of 26 strings were affected by this problem. There are 28 lines in the old MRXNS.ENG that have incorrect NSTR fields. The new MRXNS.ENG replaces those lines with 36 new ones which are both corrected normalized forms and additional normalized strings.

Following is an example of a corrected NSTR. The original MRXNS.ENG has this line,

```
ENG|02 14 19 19 19 19 2 2 2 5 5 5 alpha beta chaetocin dide dideoxy diphenyl epidithio  
phenylethyenyl|C0292271|L0354632|S2175084|
```

The corrected MRXNS.ENG replaces it with this line,

```
ENG|02 14 14 15 19 19 19 19 2 2 2 5 5 5 7 alpha beta beta chaetocin dide dideoxy  
diphenyl e epidithio phenylethyenyl|C0292271|L0354632|S2175084|
```

Here is another example. The following line comes from the original MRXNS.ENG

```
ENG|3r capsanthin|C0951566|L1862217|S2191205|
```

This is replaced in the corrected MRXNS.ENG by two lines.

```
ENG|13 3 3r 5 capsanthin ci isomer r|C0951566|L1862217|S2191205|  
ENG|13 3 3r 5 capsanthin cis isomer r|C0951566|L1862217|S2191205|
```

The original MRXNW.ENG contained no incorrect lines, however there were some missing lines. The corrected MRXNW.ENG has an additional 88 lines. For example,

```
ENG|15|C0292271|L0354632|S2175084|
```

This corresponds with the first MRXNS.ENG example shown above.

This problem only affects users who make use of the normalized index files.

The incorrect normalized strings and normalized words come from the following list of sources:

RCD99, MSH2002

#### 4. MRCXT (CST95, SNM2) Problem

##### I. Problem

There are cases of multiple CST95 and SNM2 contexts being assigned the same context number for a single CUI,SUI,SAB,SCD tuple, leading to cases of overlapping contexts. In one case, specifically, this causes a single context to have two CCP rows.

##### II. Scope

There are contexts in 52 CUIs affected by this problem. The CST95 case appears like this in MRCXT:

```
C0019054|S0376154|CST95|HEMOLYSIS|1|ANC|1|COSTART: coding symbols for thesaurus of adverse  
reaction terms|C0220949|||  
C0019054|S0376154|CST95|HEMOLYSIS|1|ANC|2|HEMATOLOGIC DISORDERS|C0018939|HEM|||  
C0019054|S0376154|CST95|HEMOLYSIS|1|ANC|2|Hemic and Lymphatic System|C0549527|HAL|||  
C0019054|S0376154|CST95|HEMOLYSIS|1|ANC|3|Erythrocyte Abnormalities|C0391870|HAL/RBC|||  
C0019054|S0376154|CST95|HEMOLYSIS|1|ANC|4|erythrocytes decreased|C0236147|HAL/RBC/DEC|||  
C0019054|S0376154|CST95|HEMOLYSIS|1|CCP||HEMOLYSIS|C0019054|HAL/RBC/DEC/HEMOLYSIS|||  
C0019054|S0376154|CST95|HEMOLYSIS|1|CCP||HEMOLYSIS|C0019054|HEM/HEMOLYSIS||+|
```

In the corrected MRCXT, it appears as two contexts (CXN=2 is not shown here):

```
C0019054|S0376154|CST95|HEMOLYSIS|1|ANC|1|COSTART: coding symbols for thesaurus of adverse  
reaction terms|C0220949|||  
C0019054|S0376154|CST95|HEMOLYSIS|1|ANC|2|Hemic and Lymphatic System|C0549527|HAL|||  
C0019054|S0376154|CST95|HEMOLYSIS|1|ANC|3|Erythrocyte Abnormalities|C0391870|HAL/RBC|||  
C0019054|S0376154|CST95|HEMOLYSIS|1|ANC|4|erythrocytes decreased|C0236147|HAL/RBC/DEC|||  
C0019054|S0376154|CST95|HEMOLYSIS|1|CCP||HEMOLYSIS|C0019054|HAL/RBC/DEC/HEMOLYSIS|||  
.....  
C0019054|S0376154|CST95|HEMOLYSIS|3|ANC|1|COSTART: coding symbols for thesaurus of adverse  
reaction terms|C0220949|||
```

C0019054|S0376154|CST95|HEMOLYSIS|3|ANC|2|HEMATOLOGIC DISORDERS|C0018939|HEM|||  
C0019054|S0376154|CST95|HEMOLYSIS|3|CCP||HEMOLYSIS|C0019054|HEM/HEMOLYSIS||+|

The SNM2 cases are less obvious because they involve cases where a particular CUI,SUI,SAB,SCD is its own child. In the original MRCXT it appears like this:

C0334970|S0637124|SNM2|NOCODE|1|ANC|1|Systematized Nomenclature of Medicine. 2nd ed.|C0220966|||  
C0334970|S0637124|SNM2|NOCODE|1|ANC|2|Occupation Axis|C0334705|||  
C0334970|S0637124|SNM2|NOCODE|1|ANC|3|Professional, Technical and Related Workers|C0334704|||  
C0334970|S0637124|SNM2|NOCODE|1|ANC|4|Economists|C0334970|||  
C0334970|S0637124|SNM2|NOCODE|1|CCP||Economists|C0334970||+|

In the corrected MRCXT, it shows up as two separate contexts:

C0334970|S0637124|SNM2|NOCODE|1|ANC|1|Systematized Nomenclature of Medicine. 2nd ed.|C0220966|||  
C0334970|S0637124|SNM2|NOCODE|1|ANC|2|Occupation Axis|C0334705|||  
C0334970|S0637124|SNM2|NOCODE|1|ANC|3|Professional, Technical and Related Workers|C0334704|||  
C0334970|S0637124|SNM2|NOCODE|1|CCP||Economists|C0334970||+|

C0334970|S0637124|SNM2|NOCODE|2|ANC|1|Systematized Nomenclature of Medicine. 2nd ed.|C0220966|||  
C0334970|S0637124|SNM2|NOCODE|2|ANC|2|Occupation Axis|C0334705|||  
C0334970|S0637124|SNM2|NOCODE|2|ANC|3|Professional, Technical and Related Workers|C0334704|||  
C0334970|S0637124|SNM2|NOCODE|2|ANC|4|Economists|C0334970|||  
C0334970|S0637124|SNM2|NOCODE|2|CCP||Economists|C0334970||+|

Note: CHD rows are not shown in this example.

The CST problem affects just one CUI, but the SNM2 problem affects 51 CUIs.

## 5. MRCOC COA Sort Order

### I. Problem

The ordering of the subheading frequency listings in the COA field of MRCOC changed. Although not specifically documented, the subheading frequencies have historically been listed in decreasing frequency order but were instead listed in alphabetical order.

### II. Scope

All cases with multiple subheadings where the frequency order did not match the alphabetical order were affected. For example, 2001AA MRCOC had the following entry:

C0000039|C0012456|MED01|L|10|CH=8,ME=2,<>=1,AN=1|

CH is the highest frequency subheading so it appears first. The corresponding entry from the 2002AA MRCOC is

this:

```
C0000039|C0012456|MED02|L|12|<>=1,AN=1,CH=10,ME=2|
```

Again, CH is the highest frequency subheading, yet it appears third because the list is sorted alphabetically. In the corrected 2002AA MRCOC, this line appears as follows:

```
C0000039|C0012456|MED01|L|12|CH=10,ME=2,<>=1,AN=1|
```

This problem affects 2007720 lines in the 2002AA MRCOC, or 17% of the total file.

## **2. Metathesaurus**

### **2.1 Source Vocabularies**

The Metathesaurus contains relationships, attributes and concept names from more than 90 vocabularies and classifications, some in multiple editions. Many of the source vocabularies are included in their entirety; for others the Metathesaurus has partial coverage. Some material in the UMLS Metathesaurus is from copyrighted sources of the respective copyright claimants. The Metathesaurus source vocabularies include terminologies designed for varied uses: in patient-record systems; large disease and procedure classifications used for statistical reporting and billing; more narrowly focused vocabularies used to record data related to psychiatry, nursing, medical devices, adverse drug reactions, etc.; disease and finding terminologies from expert diagnostic systems, and some thesauri used in information retrieval.

Metathesaurus sources may have markedly differing purposes and views. Some of these sources may match your needs exactly, while others may be useless or even harmful in your applications. For this reason, it is important to select appropriate sources and reject others, using MetamorphoSys or with queries using the Source Abbreviation (SAB) in the distribution files.

The Metathesaurus structure can incorporate translations of its source vocabularies into languages other than English. The 2002AD Metathesaurus includes the Dutch, French, Finnish, German, Italian, Portuguese, Russian (transliterated), and Spanish translations of NLM's Medical Subject Headings (MeSH). This edition also includes German translations of ICD10 and UMDNS; ICPC terms in Basque, Danish, Dutch, Finnish, French, German, Hebrew, Hungarian, Italian, Norwegian, Spanish, and Swedish; CPT terms in Spanish; Metathesaurus Version of Minimal Standard Terminology Digestive Endoscopy in French and Italian; and WHOART terms in French, German, Portuguese, and Spanish.

Users should also determine which vocabularies would require additional license arrangements for the anticipated use. MetamorphoSys (see Section 2.8 in 2002AA documentation) should be used to exclude vocabularies; it removes all vocabulary information and thus ensures compliance with the UMLS License Agreement.

#### **2.3.1 Relationships in the Metathesaurus**

Relationships in the Metathesaurus may come from the sources themselves or may be created by Metathesaurus editors to link concepts that would not otherwise be connected. Some relationships (RELS) are further refined by

a Relationship Attribute (RELA, see Appendix B.1.1 in 2002AA Documentation).

Note that the nature and purpose of a relationship depends on its source, as indicated in the “Source Abbreviation for source vocabulary” (SAB) and the “Source of Relationship labels,” (SL). The source is the authority that asserts a relationship that is represented as transparently as possible within the Metathesaurus. Thus, relationships may adhere to pragmatic or esoteric principles; some are co-occurrences, statistical relationships, or mappings; some may even be self-referential (CUI1 = CUI2) where there are differing views of synonymy. Therefore it is important to select the RELs, RELAs, SABs, and SLs that match a user’s views and purposes. Note also that a variety of relationships from earlier editions of the Metathesaurus as well as editor-asserted relationships may carry the SAB and/or SL of “MTH.”

There are eleven types of relationships that exist in the Metathesaurus.

Broader (RB) has a broader relationship.

Narrower (RN) has a narrower relationship.

Other related (RO) has relationship other than synonymous, narrower, or broader.

Like (RL) the two concepts are similar or "alike". In the current edition of the Metathesaurus, most relationships with this attribute are mappings provided by a source.

RQ unspecified source asserted relatedness, possibly synonymous.

SY source asserted synonymy.

Parent (PAR) has parent relationship in a Metathesaurus source vocabulary.

Child (CHD) has child relationship in a Metathesaurus source vocabulary.

Sibling (SIB) has sibling relationship in a Metathesaurus source vocabulary.

AQ is an allowed qualifier for a concept in a Metathesaurus source vocabulary.

QB can be qualified by a concept in a Metathesaurus source vocabulary.

### 2.3.2 Context in the Metathesaurus

AIR	FULL-NOSIB-MULTIPLE
ALT	FULL
AOD	FULL
CCS	FULL

CPT	FULL-NOSIB
CSP	FULL-MULTIPLE
CST	FULL-MULTIPLE
DSM3R	FULL-NOSIB
DSM4	FULL-NOSIB
HCPCS	FULL-NOSIB
HHC	FULL
HL7	FULL-MULTIPLE
ICD10AM	FULL
ICD10	FULL-NOSIB
ICD9CM	FULL
ICPC2E	FULL-NOSIB-MULTIPLE
ICPC2P	FULL-NOSIB-MULTIPLE
ICPC	FULL-NOSIB-MULTIPLE
MDR	FULL-MULTIPLE
MSH	FULL-MULTIPLE
NAN	FULL
NCBI	FULL-NOSIB
NCI	FULL-MULTIPLE
NEU	FULL
NIC	FULL-NOSIB-MULTIPLE
NOC	FULL
OMS	FULL-MULTIPLE
PCDS	FULL
PDQ	FULL-NOSIB-MULTIPLE
PPAC	FULL
PSY	FULL-NOSIB-MULTIPLE
RCD	FULL-MULTIPLE
SNM	FULL-NOSIB-MULTIPLE
SNMI	FULL-NOSIB
UMD	FULL-MULTIPLE
UWDA	FULL-MULTIPLE
VANDF	FULL-NOSIB-MULTIPLE
WHO	FULL-MULTIPLE

### 2.7.1.2.1 Relation Relation (File=MRFILES)

Corrected Column information:

BTS Size in bytes in this format (ISO/PC or Unix)

## Section 6

### 6.1 Content of the CD-ROMS

The 2002AD edition of the UMLS Knowledge Sources is available only in compressed formats: Unix (TGZ) and PC (ZIP). Two CD-ROMs are required for each format. To use the UMLS, you must uncompress BOTH discs to a local hard disk, which will then contain the complete distribution including the MetamorphoSys tool to customize your version.

The PC format discs (2002AD\_1\_ZIP and 2002AD\_2\_ZIP) contain the UMLS Knowledge Sources in ZIP format, with PC line termination in the ASCII files. Use this format for Windows (version 3.1 and up), Windows NT and 2000 (v4.0 and up), XP, and OS/2. PKZIP or WINZIP programs may be used to extract the data; they may be obtained using these URLs: <http://www.pkware.com> or <http://www.winzip.com>. To extract the files to your disk, assign the target directory in which you wish to create the 2002AD release and unzip the ZIP files on BOTH CD-ROMs. NOTE that your file system must support large file sizes, e.g. NTFS or FAT32.

The Unix format CD-ROMs (2002AD\_1\_TAR and 2002AD\_2\_TAR) contain the UMLS Knowledge Sources in tar GNU ZIP (gzip) format (.tar.gz), with Unix line termination in the ASCII files. Use this format for operating systems that support UNIX line termination (all flavors of UNIX and Linux). To unpack this you will need the free gzip (or gunzip) utility available from <http://www.gnu.org>. 'cd' to the target directory for 2002AD, then type the following commands:

```
gzip -dc [cdrom_path]/2002AD_1.TGZ | tar xvf -
```

and then

```
gzip -dc [cdrom_path]/2002AD_2.TGZ | tar xvf -
```

where [cdrom\_path] is the path to the TGZ file on your CD-ROM.

NOTE that if you do not include the pipe to tar, the extraction will fail when the intermediate file exceeds most Unix file system's 2 GB size limits on single files. Appropriate Java Runtime Environments (jre) for MetamorphoSys are included for each format.

All users should extract the full 2002AD UMLS Knowledge Sources to hard disk, creating the Standard 2002AD Directory Structure below which occupies 4.2 GB. We recommend a minimum of 8 GB available disk space.

PLEASE NOTE that you must have the full 2002AD UMLS Knowledge Sources on a local hard disk to use

MetamorphoSys; you will need MetamorphoSys to comply with the license agreement and to customize the Metathesaurus to meet your needs.

## Standard 2002AD UMLS Knowledge Source Directory Structure

2002AD/	root UMLS directory
DOC/	UMLS Knowledge Source documentation (this manual) in ASCII, PDF, and HTML.
META/	Metathesaurus concepts in ASCII relational format
CHANGE/	Files identifying significant differences from the previous edition.
METAMSYS/	MetamorphoSys system
METASUBSET/	Your customized Metathesaurus (initially empty)
NET/	Semantic Network in ASCII relational format and unit record formats; and Semantic Network documentation in ASCII format.
LEX/	SPECIALIST lexicon in ASCII relational and unit record formats and SPECIALIST documentation in ASCII format.
DOCS/	SPECIALIST Documentation
LEX_DB/	
LEX_PGMS/	SPECIALIST lexicon related lexical programs in executable and C source code.
MISC/	

### **A.1 Appendix to the License Agreement for Use of the UMLS Knowledge Sources**

Additions to the Appendix include the following (new sources, updates and restriction level changes):

UMLS METATHESAURUS SOURCE VOCABULARIES -- Fall 2002AD Edition Source information for new or updated sources for the 2002AD release:

---

ICD9CM\_2003 International Classification of Diseases: 9th revision, Clinical Modification (ICD-9-CM).  
Washington DC: Centers for Medicare and Medicaid Services, July 2002.

Contact: Patricia E. Brooks, [pbrooks@cms.hhs.gov](mailto:pbrooks@cms.hhs.gov); <http://www.cms.hhs.gov/medicare/icd9cm.asp>

---

MSH2003\_2002\_08\_14 Medical Subject Headings (MeSH 2003). Bethesda (MD): National Library of Medicine, August 14, 2002.

This source has been translated into many languages. To date, eight of the translations have been incorporated into the UMLS Metathesaurus.

Contact: Stuart Nelson, M.D., Head, MeSH Section; e-mail: [nelson@nlm.nih.gov](mailto:nelson@nlm.nih.gov);  
<http://www.nlm.nih.gov/mesh/meshhome.html>

---

PDQ2002 Physician Data Query Online System (PDQ). Bethesda (MD): National Cancer Institute, July 1, 2002.

Contact: Dr. Gisele Sarosy, National Cancer Institute; e-mail: [gisele@icic.nci.nih.gov](mailto:gisele@icic.nci.nih.gov);  
<http://cancernet.nci.nih.gov>

---

RXNORM RxNorm work done by the National Library of Medicine (NLM), Bethesda (MD), National Library of Medicine.

This release contains concepts created by the National Library of Medicine which express the meaning of a drug name in a normalized form. These concepts relate the names of orderable medications to a dose form and the components of those medications. For further discussion, see the article at:

<http://umlsinfo.nlm.nih.gov/RxNorm.html>

Contact: Stuart Nelson, M.D., Head, MeSH Section; e-mail: [nelson@nlm.nih.gov](mailto:nelson@nlm.nih.gov)

---

SPN02 Standard Product Nomenclature (SPN). Rockville (MD): U.S. Food and Drug Administration, 2002.

Contact: <http://www.fda.gov/cdrh/prodcode.html>

---

UMD2003 Universal Medical Device Nomenclature System: Product Category Thesaurus. Plymouth Meeting (PA): ECRI, 2002.

CATEGORY 1 RESTRICTIONS APPLY.

Contact: Elizabeth Richardson, Director of Database and Nomenclature Systems, ECRI; e-mail: erichard@ecri.org; <http://www.ecri.org>

---

**Source information for new or updated sources for the 2002AC release are below:**

---

AOD2000 Alcohol and Other Drug Thesaurus: A Guide to Concepts and Terminology in Substance Abuse and Addiction. 3rd ed. [4 volumes]. Bethesda (MD): National Institute on Alcohol Abuse and Alcoholism (NIAAA) and Center for Substance Abuse Prevention (CSAP), 2000.

Contact: Kathleen Mullen; e-mail: kmullen@his.com

---

CSP2002 Computer Retrieval of Information on Scientific Projects (CRISP). Bethesda (MD): National Institutes of Health, Division of Research Grants, Research Documentation Section, 2002.

Contact: <http://www-commons.cit.nih.gov/crisp>

---

LNC205 Logical Observations Identifiers, Names, and Codes (LOINC). Version 2.05. Indianapolis (IN): The Regenstrief Institute, 2002.

Contact: <http://www.regenstrief.org/loinc/loinc.htm>

---

MDR50 Medical Dictionary for Regulatory Activities Terminology (MedDRA). Version 5.0. International Conference on Harmonization of Technical Requirements for Registration of Pharmaceuticals for Human Use (ICH), March 2002.

**CATEGORY 3 RESTRICTIONS APPLY**

Contact: <http://meddramsso.com>

---

MDRAE50 Medical Dictionary for Regulatory Activities Terminology (MedDRA), American English Equivalents, Version 5.0. International Conference on Harmonization of Technical Requirements for Registration of Pharmaceuticals for Human Use (ICH), March, 2002.

CATEGORY 3 RESTRICTIONS APPLY

Contact: <http://meddramsso.com>

---

MDREX50 Medical Dictionary for Regulatory Activities Terminology (MedDRA), with expanded abbreviations, Version 5.0. International Conference on Harmonization of Technical Requirements for Registration of Pharmaceuticals for Human Use (ICH), March, 2002.

CATEGORY 3 RESTRICTIONS APPLY

Contact: <http://meddramsso.com>

---

MSH2002\_06\_01 Medical Subject Headings (MeSH). Bethesda (MD): National Library of Medicine, June 01, 2002.

This source has been translated into many languages. To date, eight of the translations have been incorporated into the UMLS Metathesaurus.

Contact: Stuart Nelson, M.D., Head, MeSH Section; e-mail: [nelson@nlm.nih.gov](mailto:nelson@nlm.nih.gov);  
<http://www.nlm.nih.gov/mesh/meshhome.html>

---

**Source information for new or updated sources for the 2002AB release are below:**

---

INS2002 Thesaurus Biomedical Francais/Anglais [French translation of MeSH]. Paris (France): Institut National de la Sante et Recherche Medicale, 2002.

CATEGORY 3 RESTRICTIONS APPLY

Contact: Dr. Annie Advocat; e-mail: [advocat@inserm-dicdoc.u-strasbg.fr](mailto:advocat@inserm-dicdoc.u-strasbg.fr); <http://www.inserm.fr>

---

MDR41 Medical Dictionary for Regulatory Activities Terminology (MedDRA) Version 4.1, November, 2001. International Conference on Harmonization of Technical Requirements for Registration of Pharmaceuticals for Human Use (ICH).

CATEGORY 3 RESTRICTIONS APPLY

Contact: <http://meddramsso.com>

---

MDRAE41 Medical Dictionary for Regulatory Activities Terminology (MedDRA), American English Equivalents, Version 4.1, November, 2001. International Conference on Harmonization of Technical Requirements for Registration of Pharmaceuticals for Human Use (ICH).

CATEGORY 3 RESTRICTIONS APPLY

Contact: <http://meddramsso.com>

---

MDREA41 Medical Dictionary for Regulatory Activities Terminology (MedDRA), American English, with expanded abbreviations, Version 4.1, November, 2001. International Conference on Harmonization of Technical Requirements for Registration of Pharmaceuticals for Human Use (ICH).

CATEGORY 3 RESTRICTIONS APPLY

Contact: <http://meddramsso.com>

---

MDREX41 Medical Dictionary for Regulatory Activities Terminology (MedDRA), with expanded abbreviations, Version 4.1, November, 2001. International Conference on Harmonization of Technical Requirements for Registration of Pharmaceuticals for Human Use (ICH).

CATEGORY 3 RESTRICTIONS APPLY

Contact: <http://meddramsso.com>

---

MSH2002\_02\_10 Medical Subject Headings (MeSH). Bethesda (MD): National Library of Medicine, February 10, 2002.

This source has been translated into many languages. To date, eight of the translations have been incorporated into the UMLS Metathesaurus.

Contact: Stuart Nelson, M.D., Head, MeSH Section; e-mail: [nelson@nlm.nih.gov](mailto:nelson@nlm.nih.gov);  
<http://www.nlm.nih.gov/mesh/meshhome.html>

---

MTHMSTFRE Metathesaurus Version of Minimal Standard Terminology Digestive Endoscopy: French Edition  
April 22, 1998.

\*NOTE: Now a CATEGORY 0.

Contact: Michele Tringali, [tringali.michele@aoud.sanita.fvg.it](mailto:tringali.michele@aoud.sanita.fvg.it)

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MTHMSTITA Metathesaurus Version of Minimal Standard Terminology Digestive Endoscopy: Italian Edition  
April 22, 1998.

\*NOTE: Now a CATEGORY 0.

Contact: Michele Tringali, [tringali.michele@aoud.sanita.fvg.it](mailto:tringali.michele@aoud.sanita.fvg.it)

---

NCBI2001 NCBI Taxonomy, Bethesda (MD): National Center for Biotechnology Information, 2001.

Contact: [www.ncbi.nlm.nih.gov/Taxonomy/](http://www.ncbi.nlm.nih.gov/Taxonomy/)

---

NLM02 RxNorm work done by the National Library of Medicine (NLM), Bethesda (MD), National Library of Medicine.

This release contains concepts created by the National Library of Medicine which express the meaning of a drug name in a normalized form. These concepts relate the names of orderable medications to a dose form and the components of those medications. For further discussion, see the article at:

<http://umlsinfo.nlm.nih.gov/RxNorm.html>

Contact: Stuart Nelson, M.D., Head, MeSH Section; e-mail: [nelson@nlm.nih.gov](mailto:nelson@nlm.nih.gov)

---

NLM03 RxNorm relationship work done by the National Library of Medicine (NLM), Bethesda (MD), National Library of Medicine.

This release contains concepts created by the National Library of Medicine which express the meaning of a drug name in a normalized form. These concepts relate the names of orderable medications to a dose form and the components of those medications. For further discussion, see the article at:

<http://umlsinfo.nlm.nih.gov/RxNorm.html>

Contact: Stuart Nelson, M.D., Head, MeSH Section; e-mail: [nelson@nlm.nih.gov](mailto:nelson@nlm.nih.gov)

---

VANDF01 U.S. Department of Veterans Affairs, Veterans Health Administration National Drug File. Department of Veterans Affairs, Washington, DC. Release Date: September 5, 2001.

\*NOTE: Now a CATEGORY 0.

Contact: <http://www.vapbm.org/PBM/natform1.htm>

---

## **Appendix B Metathesaurus Data Elements and Source Vocabulary Information**

### **B.1.1 Column Descriptions**

Updates to Column Descriptions:

---

ATNL Attribute Name List for a Source

Found in MRSAB

Examples: MUI, RN, TH

---

CENC Character Encoding

Found in MRSAB

Character set as specified by the IANA official names for character assignments

See <http://www.iana.org/assignments/character-sets>

---

CFR CUI Frequency

Found in MRSAB

The number of CUIs associated with a source

Example: 10234

---

CURVER Current Version Flag

Found in MRSAB

A Y or N flag indicating whether or not this row corresponds to the current version of the named source in a particular release.

---

CXTY Context Type

Found in MRSAB

One or more context type for a source per Section 2.3.2 in the documentation

Examples: FULL, NOSIB, MULTIPLE, FULL-MULTIPLE

---

IMETA Metathesaurus Insert Version

Found in MRSAB

The version of the Metathesaurus that a source appears

Example: 2001AB

---

LAT Language

Found in MRSAB

The language of a source

Example: ENG, FRE, GER

---

## MAPIN Mapping in Current MetamorphoSys Subset

Found in MRCUI

For use with MetamorphoSys, indicates whether CUI is in subsetted Metathesaurus created with MetamorphoSys.

Valid Values:

Y = CUI2 is in subset

N = CUI2 is not in subset

Null

---

## MEND Metathesaurus End Date

Found in MRSAB

The date a source ceased to be active

Example: 2001\_05\_10

---

## MSTART Metathesaurus Start Date

Found in MRSAB

The date a source became active

Example: 2001\_04\_03

---

## RCUI Root Source CUI

Found in MRSAB

Concept Unique Identifier for the root SRC concept for a source

---

## RMETA Metathesaurus Remove Version

Found in MRSAB

The version of the Metathesaurus where a version is removed

Example: 2002AC

---

RSAB Root Source Abbreviation

Found in MRSAB

Versionless Source Abbreviation

Example: MSH, AOD, RCD

---

SABIN Source in Current Subset

Found in MRSAB

A Y or N flag indicating whether or not this row is represented in the current MetamorphoSys subset. Initially always Y where CURVER is Y, but later is recomputed by MetamorphoSys.

---

SCC Source Content Contact

Found in MRSAB

The source contact information for users

---

SF Source Family

Found in MRSAB

Source Family groupings defined for the Metathesaurus

Example: ICPC, MSH

---

SLC Source License Contact

Found in MRSAB

The contact information for a source regarding licensing issues

---

SON Official Source Information

Found in MRSAB

The official name for a source

Example: Medical Subject Headings

---

## SRL Source Restriction Level

Found in MRSO and MRSAB

The "Category of additional restrictions" of the vocabulary source of this string. See the UMLS License agreement for the meaning of each level, and for the restriction level for any source vocabulary.

Valid Values:

0 No additional restrictions.

1 LICENSEE is prohibited from translating the vocabulary source into another language or from producing other derivative works based on this single vocabulary source.

2 All category 1 restrictions AND

LICENSEE is prohibited from using the vocabulary source in operational applications that create records or information containing data from the vocabulary source. Use for data creation research or product development is allowed.

3 LICENSEE's right to use material from the source vocabulary is restricted to internal use at the LICENSEE's site(s) for research, product development, and statistical analysis only. Internal use includes use by employees, faculty, and students of a single institution at multiple sites. Notwithstanding the foregoing, use by students is limited to doing research under the direct supervision of faculty. Internal research, product development, and statistical analysis use expressly excludes: use of material from these copyrighted sources in routine patient data creation; incorporation of material from these copyrighted sources in any publicly accessible computer-based information system or public electronic bulletin board including the Internet; publishing or translating or creating derivative works from material from these copyrighted sources; selling, leasing, licensing, or otherwise making available material from these copyrighted works to any unauthorized party; and copying for any purpose except for back up or archival purposes.

LICENSEE may be required to display special copyright notices before displaying data from the vocabulary source. Applicable notices are included in the list of UMLS Metathesaurus Vocabulary sources, that is part of the "License Agreement for Use of UMLS Products".

---

SVER Source Version

Found in MRSAB

Release date or version of a source

Example: 5.1, 2001

---

TFR Term Frequency for a source

Found in MRSAB

The number of terms for a source

Example: 12343

---

TTYL Term Type List for a Source

Found in MRSAB

List of all term types in a source

Example: PT, EN

---

VCUI Versioned Source CUI

Found in MRSAB

CUI of the versioned SRC concept for a source

---

VSAB Versioned Source Abbreviation

Found in MRSAB

The versioned source abbreviation for a source

Example: MSH2003\_2002\_08\_14

---

## **B.1.2 Attribute Descriptions**

Attribute additions and changes for 2002AD include the following:

---

LT Lexical Tag

\*NOTE: This attribute was present in older versions of the Metathesaurus. It was discontinued but has been brought back in 2002AD.

Indicates if a chemical or medical device is a tradename

Valid Value: TRD

---

MED#### MEDLINE Backfile Postings 1910 through 2002 (MeSH only)

'MED' followed by a numeric value followed by another numeric value preceded by an asterisk (\*); one of the two values may be absent, indicating no occurrences.

Data elements which give the number of times a MeSH term has been used in MEDLINE, by year on the NLM system. For MeSH main headings, each element has two values: the total occurrences and the occurrences in which the term was designated a principal concept, preceded by an asterisk. For subheadings, only the total postings are given. These attributes have a SAB of NLM-MED.

This is the only source of information in the Metathesaurus on the frequency of use of MeSH headings in MEDLINE from 1910 and on the total frequency of use of MeSH headings in MEDLINE from 1966 to the present.

---

## B.2 Source Vocabularies and their Abbreviations

Complete list of Source Abbreviations with the new updates and new sources for 2002AD included. Note that both the versionless and versioned source abbreviations are now included:

<b>Versionless SAB</b>	<b>Versioned SAB</b>	<b>Source Information</b>
AIR	AIR93	AI/RHEUM. Bethesda (MD): National Library of Medicine, Lister Hill Center, 1993.
ALT	ALT2000	Alternative Billing Concepts (AltLink). Version 983. Las Cruces (NM): Alternative Link LLC 2000.

AOD	AOD2000	Alcohol and Other Drug Thesaurus: A Guide to Concepts and Terminology in Substance Abuse and Addiction. 3rd ed. [4 volumes]. Bethesda (MD): National Institute on Alcohol Abuse and Alcoholism (NIAAA) and Center for Substance Abuse Prevention (CSAP), 2000.
BI	BI98	Beth Israel OMR Clinical Problem List Vocabulary. Version 1.0. Boston (MA): Beth Israel Deaconess Medical Center, 1999.
BRMP	BRMP2002	Descritores em Ciencias da Saude [Portuguese translation of MeSH]. Sao Paulo (Brazil): Latin American and Caribbean Center on Health Sciences Information. BIREME/PAHO/WHO, 2002.
BRMS	BRMS2002	Descriptores en Ciencias de la Salud [Spanish translation of MeSH]. Sao Paulo (Brazil): Latin American and Caribbean Center on Health Sciences Information. BIREME/PAHO/WHO, 2002.
CCPSS	CCPSS99	Canonical Clinical Problem Statement System (CCPSS). Version 1.0. Nashville (TN): Vanderbilt University, 1999.
CCS	CCS99	Clinical Classifications Software (CCS). June 1999 release. Rockville (MD): Agency for Health Care Policy and Research (AHCPR), 1999.
CDT	CDT3	Current Dental Terminology (CDT) contained in the HCFA Common Procedure Coding System (HCPCS). Version 3. Washington (DC): Health Care Financing Administration, 2002.
COSTAR	COSTAR_89-95	Computer-Stored Ambulatory Records (COSTAR). Boston (MA): Massachusetts General Hospital, 1989, 1992, 1993, 1995. (List of terms that occur frequently at 3 COSTAR sites, supplied by Massachusetts General Hospital)
CPM	CPM93	Columbia Presbyterian Medical Center Medical Entities Dictionary. New York (NY): Columbia Presbyterian Medical Center, 1993.
CPT	CPT2002	Physicians' Current Procedural Terminology (CPT). 4th ed. Chicago (IL): American Medical Association, 2002.
CPTSP	CPT01SP	Current Procedural Terminology (CPT), Spanish Translation. 4th ed. Chicago (IL): American Medical Association, 2001.
CSP	CSP2002	Computer Retrieval of Information on Scientific Projects (CRISP). Bethesda (MD): National Institutes of Health, Division of Research Grants, Research Documentation Section, 2002.
CST	CST95	Coding Symbols for Thesaurus of Adverse Reaction Terms (COSTART). 5th ed. Rockville (MD): U.S. Food and Drug Administration, Center for Drug Evaluation and Research, 1995.
DDB	DDB00	Diseases Database 2000. London (England): Medical Object Oriented Software Enterprises Ltd., 2000.
DMD	DMD2002	German translation of MeSH. Cologne (Germany): Deutsches Institut fuer Medizinische Dokumentation und Information, 2002.

DMDICD10	DMDICD10_1995	Internationale Klassifikation der Krankheiten 10 [German translation of ICD10]. Cologne (Germany): Deutsches Institut fuer Medizinische Dokumentation und Information, 1998.
DMDUMD	DMDUMD_1996	Die Nomenklatur fuer Medizinprodukte UMDNS [German translation of UMDNS]. Cologne (Germany): Deutsches Institut fuer Medizinische Dokumentation und Information, 2000.
DSM3R	DSM3R_1987	Diagnostic and Statistical Manual of Mental Disorders (DSM-III-R). 3rd ed. rev. Washington (DC): American Psychiatric Association, 1987.
DSM4	DSM4_1994	Diagnostic and Statistical Manual of Mental Disorders (DSM-IV). Washington (DC): American Psychiatric Association, 1994.
DUT	DUT2001	Nederlandse vertaling van Mesh (Dutch translation of MeSH). Amsterdam, The Netherlands: Nederlands Tijdschrift voor Geneeskunde (Dutch Journal of Medicine), 2001.
DXP	DXP94	DXplain (An expert diagnosis program). Boston (MA): Massachusetts General Hospital.
FIN	FIN2002	Finnish translation of MeSH. Helsinki (Finland): Finnish Medical Society Duodecim, 2002.
HCDT	HCDT3	HCPCS Version of Current Dental Terminology (CDT). Version 3. Washington (DC): Health Care Financing Administration, 2002.
HCPCS	HCPCS02	Healthcare Financing Administration Common Procedure Coding System (HCPCS). Washington (DC): Health Care Financing Administration, 2002.
HCPT	HCPT02	HCPCS Version of Current Procedural Terminology (CPT). Washington (DC): Health Care Financing Administration, 2002.
HHC	HHC96	Saba, Virginia. Home Health Care Classification of Nursing Diagnoses and Interventions. Washington (DC): Georgetown University, 1996.
HL7	HL7_1998-2002	Health Level Seven Vocabulary (HL7). Ann Arbor (MI): Health Level Seven, 1998.
ICD10	ICD10_1998	International Statistical Classification of Diseases and Related Health Problems (ICD-10). 10th rev. Geneva (Switzerland): World Health Organization, 1998.
ICD10AE	ICD10AE_1998	International Statistical Classification of Diseases and Related Health Problems (ICD-10): Americanized Version. 10th rev. Geneva (Switzerland): World Health Organization, 1998.
ICD10AM	ICD10AM_2000	International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Australian Modification; 2nd Edition, published January 2000.
ICD9CM	ICD9CM_2003	The International Classification of Diseases: 9th revision, Clinical Modification (ICD-9-CM). Washington (DC): Health Care Financing Administration, July, 2002.

ICPC	ICPC93	The International Classification of Primary Care (ICPC). Denmark: World Organisation of Family Doctors, 1993.
ICPC2E	ICPC2E_1998	International Classification of Primary Care (ICPC) / prepared by the Classification Committee of the World Organization of National Colleges, Academies, and Academic Associations of General Practitioners/Family Physicians (WONCA), known more briefly as the World Organization of Family Doctors. 2nd ed. Henk Lamberts and Inge Hofmans-Okkes, 1998.
ICPC2AE	ICPC2AE_1998	American English equivalent of the ICPC2E terms, produced by NLM. 2nd edition, 1998.
ICPC2P	ICPC2P_2000	International Classification of Primary Care, Version 2-Plus, Australian Modification. January, 2000.
ICPCPAE	ICPCPAE_2000	American English equivalent of the ICPC2P terms, produced by NLM. Version 2-Plus, January, 2000.
ICPCBAQ	ICPCBAQ_1993	Basque translation of ICPC93; see ICPC93
ICPCDAN	ICPCDAN_1993	Danish translation of ICPC93; see ICPC93
ICPCDUT	ICPCDUT_1993	Dutch translation of ICPC93; see ICPC93
ICPCFIN	ICPCFIN_1993	Finnish translation of ICPC93; see ICPC93
ICPCFRE	ICPCFRE_1993	French translation of ICPC93; see ICPC93
ICPCGER	ICPCGER_1993	German translation of ICPC93; see ICPC93
ICPCHEB	ICPCHEB_1993	Hebrew translation of ICPC93; see ICPC93
ICPCHUN	ICPCHUN_1993	Hungarian translation of ICPC93; see ICPC93
ICPCITA	ICPCITA_1993	Italian translation of ICPC93; see ICPC93
ICPCNOR	ICPCNOR_1993	Norwegian translation of ICPC93; see ICPC93
ICPCPOR	ICPCPOR_1993	Portuguese translation of ICPC93; see ICPC93
ICPCSPA	ICPCSPA_1993	Spanish translation of ICPC93; see ICPC93
ICPCSWE	ICPCSWE_1993	Swedish translation of ICPC93; see ICPC93
INS	INS2002	Thesaurus Biomedical Francais/Anglais [French translation of MeSH]. Paris (France): Institut National de la Sante et Recherche Medicale, 2002.
ITA	ITA2002	Italian translation of MeSH. Istituto Superiore di Sanita Servizio Documentazione, Viale Regina Elena, 229 00616 Rome, Italy; 2002.
JABL	JABL99	Online Congenital Multiple Anomaly/Mental Retardation Syndromes. Stanley Jablonski. Bethesda (MD): National Library of Medicine, 1999.
LCH	LCH90	Library of Congress Subject Headings. 12th ed. Washington (DC): Library of Congress, 1989.
LNC	LNC205	Logical Observation Identifiers, Names and Codes (LOINC). Version 2.05. Indianapolis (IN): The Regenstrief Institute, 2002.

MCM	MCM92	Glossary of Methodologic Terms for Clinical Epidemiologic Studies of Human Disorders. Canada: McMaster University.
MDDB	MDDB99	First DataBank Master Drug Data Base (MDDB). San Bruno (CA): First DataBank Inc., 1999.
MDR	MDR50	Medical Dictionary for Regulatory Activities Terminology (MedDRA) Version 5.0. International Conference on Harmonization of Technical Requirements for Registration of Pharmaceuticals for Human Use (ICH), March 2002.
MDRAE	MDRAE50	Medical Dictionary for Regulatory Activities Terminology (MedDRA), American English Equivalents, Version 5.0. International Conference on Harmonization of Technical Requirements for Registration of Pharmaceuticals for Human Use (ICH), March 2002.
MDREA	MDREA50	Medical Dictionary for Regulatory Activities Terminology (MedDRA), American English, with expanded abbreviations, Version 5.0. International Conference on Harmonization of Technical Requirements for Registration of Pharmaceuticals for Human Use (ICH), March 2002.
MDREX	MDREX50	Medical Dictionary for Regulatory Activities Terminology (MedDRA),with expanded abbreviations, Version 5.0. International Conference on Harmonization of Technical Requirements for Registration of Pharmaceuticals for Human Use (ICH), March 2002.
MIM	MIM93	Online Mendelian Inheritance in Man (OMIM). Baltimore (MD): Johns Hopkins University, Center for Biotechnology Information, 1994.
MMSL	MMSL01	Multum MediSource Lexicon. Denver (CO): Multum Information Services, Inc., July 2001.
MMX	MMX01	Micromedex DRUGDEX. Englewood (CO): Micromedex, 2001.
MSH	MSH_2003_2002_08_14	Medical Subject Headings (MeSH 2003). Bethesda (MD): National Library of Medicine, August 14, 2002.
MTH	MTH	UMLS Metathesaurus. Bethesda (MD): National Library of Medicine.
MTHCH	MTHCH02	Metathesaurus Hierarchical CPT Terms (These terms were created by the NLM to provide contextual information for CPT). Bethesda (MD): National Library of Medicine.
MTHHH	MTHHH02	Metathesaurus Hierarchical HCPCS Terms (These terms were created by the NLM to provide contextual information for HCPCS). Bethesda (MD): National Library of Medicine.
MTHICD9	MTHICD9_2003	NLM-generated entry terms for ICD-9. Bethesda (MD): National Library of Medicine.
MTHMST	MTHMST2001	Metathesaurus Version of Minimal Standard Terminology Digestive Endoscopy: International Edition April 22, 1998.

MTHMSTFRE	MTHMSTFRE_2001	Metathesaurus Version of Minimal Standard Terminology Digestive Endoscopy: French Edition April 22, 1998.
MTHMSTITA	MTHMSTITA_2001	Metathesaurus Version of Minimal Standard Terminology Digestive Endoscopy: Italian Edition April 22, 1998.
NAN	NAN99	Carroll-Johnson, Rose Mary, editor. Classification of Nursing Diagnoses. Proceedings of the 10th conference, 1999.
NCBI	NCBI2001	NCBI Taxonomy, Bethesda (MD): National Center for Biotechnology Information, 2001.
NCI	NCI2001a	NCI Thesaurus. Version 3.0. Bethesda (MD): National Cancer Institute, National Institutes of Health, July 2001.
NDDF	NDDF01	National Drug Data File. San Bruno (CA): First DataBank Inc., 2001.
NEU	NEU99	Bowden, Douglas M., Martin, Richard F., Dubach, Jov G. Neuronames Brain Hierarchy. Seattle (WA): University of Washington, Primate Information Center, 1999.
NIC	NIC99	McCloskey, Joanne C., Bulechek, Gloria M., editors. Nursing interventions classification (NIC): Iowa intervention project. St. Louis (MO): Mosby-Year Book, 1999.
NOC	NOC97	Johnson, Marion, Maas, Meridean, editors. Nursing Outcomes Classification (NOC): Iowa Outcomes Project. St. Louis (MO): Mosby-Year Book, 1997.
OMS	OMS94	Martin, Karen S., Scheet, Nancy J. The Omaha System: Applications for Community Health Nursing. Philadelphia (PA): W.B. Saunders, 1992 (with 1994 corrections).
PCDS	PCDS97	Ozbolt, Judy Grace. Patient Care Data Set (PCDS). Version 4.0. Nashville (TN): Vanderbilt University School of Nursing, 1998.
PDQ	PDQ2002	Physician Data Query Online System (PDQ). Bethesda (MD): National Cancer Institute, July 1 2002.
PPAC	PPAC98	Pharmacy Practice Activity Classification (PPAC). Washington (DC): American Pharmaceutical Association. January, 1998.
PSY	PSY2001	Thesaurus of Psychological Index Terms. Ninth edition. Washington (DC): American Psychological Association, 2001.
QMR	QMR96	Quick Medical Reference (QMR). San Bruno (CA): First Databank, 1997.
RAM	RAM99	Randolph A. Miller Clinically Related Concepts. Nashville (TN): Vanderbilt University, 1999.
RCD	RCD99	Clinical Terms Version 3 (Read Codes) (Q199). England: National Health Service Centre for Coding and Classification, March, 1999.
RCDAE	RCDAE_1999	American English equivalent of the Read Thesaurus terms produced by NLM. Version 3 (Q199). Bethesda (MD): National Library of Medicine, UMLS project, 1999.

RCDSA	RCDSA_1999	American English equivalent of synthesized terms from the Read Thesaurus produced by NLM. Version 3 (Q199). Bethesda (MD): National Library of Medicine, UMLS project, 1999.
RCDSY	RCDSY_1999	Synthesized Read terms (without initial bracketed letters) of the Read Thesaurus produced by NLM. Version 3 (Q199). Bethesda (MD): National Library of Medicine, UMLS project, 1999.
RUS	RUS2002	Russian Translation of MeSH. Moscow (Russia): State Central Scientific Medical Library, 2002.
RXNORM	RXNORM_02AD	RxNorm work done by the National Library of Medicine (NLM), Bethesda (MD), National Library of Medicine.
SNM	SNM2	Cote, Roger A., editor. Systematized nomenclature of medicine. 2nd ed. Skokie (IL): College of American Pathologists, 1979. SNOMED update, 1982. Skokie (IL): College of American Pathologists, 1982.
SNMI	SNMI98	Cote, Roger A., editor. Systematized Nomenclature of Human and Veterinary Medicine: SNOMED International. Version 3.5. Northfield, (IL): College of American Pathologists; Schaumburg (IL): American Veterinary Medical Association, 1998.
SPN	SPN02	Standard Product Nomenclature (SPN). Rockville (MD): U.S. Food and Drug Administration, 2002.
SRC	SRC	UMLS Metathesaurus Source Terminologies. Bethesda (MD): National Library of Medicine.
ULT	ULT93	Bell, Douglas. Ultrasound Structured Attribute Reporting (UltraSTAR). Boston (MA): Brigham & Womens Hospital, 1993.
UMD	UMD2003	Universal Medical Device Nomenclature System: Product Category Thesaurus. Plymouth Meeting (PA): ECRI, 2002.
UWDA	UWDA155	University of Washington Digital Anatomist (UWDA). v. 1.55, Seattle (WA): University of Washington, January 2001.
VANDF	VANDF01	U.S. Department of Veterans Affairs, Veterans Health Administration National Drug File. Department of Veterans Affairs, Washington, DC., September 5, 2001.
WHO	WHO97	WHO Adverse Drug Reaction Terminology (WHOART). Uppsala (Sweden): WHO Collaborating Centre for International Drug Monitoring, 1997.
WHOFRE	WHOFRE_1997	French translation of WHO97; see WHO97
WHOGER	WHOGER_1997	German translation of WHO97; see WHO97
WHOPOR	WHOPOR_1997	Portuguese translation of WHO97; see WHO97
WHOSPA	WHOSPA_1997	Spanish translation of WHO97; see WHO97

### B.2.1 Sources of additional (non-concept name) information

Complete list of source information with the new updates and new sources for 2002AD included:

A small number of sources contribute information to the Metathesaurus but do not contribute concept names (i.e.,

the SAB does not appear in MRSO). For example, a source may contribute relationships between concepts, but not actually name the concepts. The following versioned and versionless SABs do not appear in MRSO:

HDA	HDA99	Health devices alerts. Plymouth Meeting, PA: ECRI.
HLREL	HLREL_1998	ICPC2E-ICD10 relationships from Dr. Henk Lamberts (HLREL). University of Amsterdam. Contact: H.Lamberts@AMC.UVA.NL.
HPC	HPC99	Healthcare product comparison system. Plymouth Meeting, PA: ECRI.
MBD	MBD02	MEDLINE (1992-1996)
MED	MED02	MEDLINE (1997-2002)
NCISEER	NCISEER_1999	NCI Surveillance, Epidemiology, and End Results (SEER) conversions between ICD-9-CM and ICD-10 neoplasm codes. National Cancer Institute, Bethesda, MD. Release Date: June 1999.
NLM-MED	NLM-MED	National Library of Medicine (NLM). Bethesda (MD): National Library of Medicine.
OMIM	OMIM97	Online Mendelian Inheritance in Man (OMIM). Bethesda (MD): National Center for Biotechnology Information, 1997. Contact: <a href="http://www3.ncbi.nlm.nih.gov/Omim">http://www3.ncbi.nlm.nih.gov/Omim</a> .

### B.3 Number of Strings from Each Source

Complete list of string counts with the new updates and new sources for 2002AD included:

AIR	685
ALT	4878
AOD	20685
BI	1251
BRMP	41875
BRMS	40288
CCPSS	15840
CCS	1608
CDT	508
COSTAR	3461
CPM	536
CPTSP	7894
CPT	16253

CSP	20434
CST	6444
DDB	256
DMD	47840
DMDICD10	12003
DMDUMD	4415
DSM3R	467
DSM4	490
DUT	36264
DXP	10113
FIN	20321
HCDT	508
HCPCS	4596
HCPT	8336
HHC	335
HL7	635
ICD10	13505
ICD10AE	1107
ICD10AM	25891
ICD9CM	20069
ICDAMA	2405
ICPC2AE	210
ICPC2E	3757
ICPC2P	13383
ICPC	1053
ICPCBAQ	695
ICPCDAN	723
ICPCDUT	723
ICPCFIN	722
ICPCFRE	723
ICPCGER	723
ICPCHEB	485
ICPCHUN	718
ICPCITA	723
ICPCNOR	722
ICPCPAE	901
ICPCPOR	723
ICPCSPA	723

ICPCSWE	723
INS	30884
ITA	21158
JABL	3260
LCH	6652
LNC	79522
MCM	43
MDDDB	18238
MDR	73401
MDRAE	1005
MDREA	16
MDREX	486
MIM	250
MMSL	38789
MMX	11536
MSH	513840
MTH	31982
MTHCH	905
MTHHH	323
MTHICD9	18507
MTHMST	1945
MTHMSTFRE	1833
MTHMSTITA	1799
NAN	169
NCBI	136466
NCI	2276
NDDF	20088
NEU	3865
NIC	10187
NOC	3056
OMS	539
PCDS	2229
PDQ	19624
PPAC	380
PSY	7671
QMR	943
RAM	258
RCD	347568

RCDAE	17315
RCDSA	1185
RCDSY	22186
RUS	42253
RXNORM	34772
SNM	44274
SNMI	164179
SPN	5064
SRC	694
ULT	84
UMD	15684
UWDA	79463
VANDF	15795
WHO	3831
WHOFRE	3717
WHOGER	3402
WHOPOR	3751
WHOSPA	3106

#### **B.4 Types of Names in a Vocabulary - the TTY**

New Term Types included in 2002AD:

RAB	SRC root abbreviation
RHT	SRC root hierarchical term
RPT	SRC root preferred term
RSY	SRC root synonym
SSN	SRC short source name used in UMLS Knowledge Source Server
VAB	SRC versioned abbreviation
VPT	SRC versioned preferred name
VSY	SRC versioned synonym

New Term Types included in 2002AB and 2002AC:

CMN	Common name
EQ	Equivalent name
PCN	Preferred common name

SCN	Scientific name
UCN	Unique common name
UPC	Unique preferred common name
USN	Unique scientific name
USY	Unique synonym
XX	Expanded string

Term Types not currently in 2002AC (these became the LRN attribute):

RN	Official component related name in LOINC
RX	Alternate name of preferred name

### **B.5 Order of Precedence of Source Concept Names as Distributed**

New Precedence for the 2002AD release:

MTH/PN  
MTH/MM  
MSH/MH  
MSH/TQ  
MSH/EP  
MSH/EN  
MSH/XQ  
MSH/NM  
RXNORM/SCD  
RXNORM/SCDC  
DSM4/PT  
DSM3R/PT  
SNMI/PT  
SNMI/PX  
SNMI/HT  
SNMI/HX  
VANDF/CD  
VANDF/HT  
VANDF/IN  
MDDB/CD  
MMX/CD  
MMX/IN  
RCDSA/PT  
RCDSY/PT  
RCDAE/PT  
RCD/PT  
MSH/N1

MSH/CE  
RXNORM/IN  
RCDSA/OP  
RCDSY/OP  
RCDAE/OP  
RCD/OP  
SNM/PT  
SNMI/RT  
SNM/RT  
SNMI/SY  
SNMI/SX  
RCDSA/SY  
RCDSY/SY  
RCDAE/SY  
RCD/SY  
RCDSA/IS  
RCDSY/IS  
RCDAE/IS  
RCD/IS  
RCDAE/AT  
RCD/AT  
RCD/AS  
SNMI/AD  
SNM/SY  
SNM/RS  
CPM/PT  
DDB/PT  
DDB/SY  
NEU/HT  
NEU/PT  
NEU/XX  
NEU/SY  
UWDA/PT  
UWDA/SY  
UMD/PT  
UMD/ET  
UMD/RT  
MMSL/CD  
MMSL/BD  
MMSL/SC  
MMSL/MS  
MMSL/GN  
MMSL/BN  
MMSL/IN  
NDDF/CD  
NDDF/IN  
SPN/PT

MDRAE/HG  
MDR/HG  
MDREA/HG  
MDREX/HG  
MDRAE/PT  
MDR/PT  
MDREA/PT  
MDREX/PT  
MDR/OS  
MDRAE/HT  
MDR/HT  
MDREA/HT  
MDRAE/SC  
MDREX/HT  
MDR/SC  
MDRAE/LT  
MDR/LT  
MDREA/LT  
MDREX/LT  
CST/PT  
WHO/OS  
WHO/HT  
WHO/PT  
WHO/IT  
AIR/HT  
AIR/FI  
AIR/DI  
AIR/SY  
ULT/PT  
CPT/PT  
CPT/SY  
CPT/MP  
HCPT/PT  
HCPCS/PT  
CDT/PT  
HCDT/PT  
HCPCS/MP  
HCPT/MP  
ICD10AE/PT  
ICD10/PT  
ICD10AE/PX  
ICD10/PX  
ICD10AE/PS  
ICD10/PS  
ICD10AMAE/PT  
ICD10AM/PT  
ICD10AMAE/PX

ICD10AM/PX  
ICD10AMAE/PS  
ICD10AM/PS  
PDQ/PT  
PDQ/SY  
NCI/PT  
NCI/SY  
NCI/AB  
ICPC2AE/PT  
ICPC2E/PT  
ICPC2AE/PX  
ICPC2E/PX  
ICPC/PX  
ICPC/PT  
ICPC2AE/PS  
ICPC2E/PS  
ICPC2AE/ET  
ICPC2E/ET  
ICPC/PS  
ICPC/PC  
ICPC/CX  
ICPC/CP  
ICPC/CS  
ICPC/CC  
ICPC2E/CO  
ICPC/CO  
ICPC2AE/AB  
ICPC2E/AB  
CCPSS/TX  
CCPSS/TC  
CCPSS/PT  
CCPSS/MP  
ICPCPAE/SF  
ICPCPAE/SY  
ICPC2P/SF  
ICPC2P/SY  
ICPCPAE/PX  
ICPC2P/PX  
ICPCPAE/PT  
ICPC2P/PT  
ICPCPAE/PS  
ICPC2P/PS  
AOD/DE  
AOD/DS  
AOD/XD  
AOD/FN  
AOD/ET

AOD/ES  
AOD/EX  
AOD/NP  
AOD/NS  
AOD/NX  
HCPCS/OP  
CDT/OP  
HCPT/OP  
HCPCS/OM  
HCPT/OM  
JABL/PC  
JABL/PT  
JABL/SS  
JABL/SY  
MIM/PT  
PDQ/RT  
NCBI/USN  
NCBI/SCN  
NCBI/UPC  
NCBI/PCN  
NCBI/USY  
NCBI/SY  
NCBI/UCN  
NCBI/CMN  
NCBI/EQ  
BI/PT  
BI/SY  
BI/RT  
LNC/LX  
LNC/LN  
LNC/LO  
LNC/CX  
LNC/CN  
LNC/SX  
LNC/SN  
LNC/LS  
DSM4/HT  
DSM3R/HT  
SNM/HT  
ICD9CM/PT  
MDRAE/OL  
MDR/OL  
MDREX/OL  
ICD9CM/HT  
CCS/HT  
CCS/MD

CCS/SD  
CCS/MV  
CCS/SP  
ICD10AE/HT  
ICD10/HT  
ICD10AE/HX  
ICD10/HX  
ICD10AE/HS  
ICD10/HS  
ICD10AMAE/HT  
ICD10AM/HT  
UMD/HT  
ICPC/HT  
RAM/PT  
RAM/RT  
QMR/PT  
HL7/PT  
HL7/DF  
HL7/DFA  
HL7/VS  
MTHCH/HT  
MTHHH/HT  
HHC/DX  
BI/AB  
HHC/IV  
HHC/CO  
NIC/IV  
NIC/HC  
NAN/PT  
NAN/HT  
NAN/RT  
OMS/MT  
OMS/PR  
OMS/TG  
OMS/HT  
OMS/PQ  
OMS/IV  
OMS/SI  
NIC/AC  
NIC/SA  
NOC/OC  
NOC/IX  
NOC/ID  
PCDS/GO  
PCDS/OR  
PCDS/PR  
NIC/HT

NOC/HT  
NOC/HC  
HHC/MP  
PCDS/CO  
PCDS/HX  
PCDS/HT  
COSTAR/PT  
DXP/DI  
DXP/FI  
DXP/SY  
MCM/PT  
MCM/RT  
PPAC/DO  
PPAC/CL  
PPAC/AC  
PPAC/ST  
PPAC/TA  
ALT/PT  
ALT/SY  
ALT/HT  
MTH/PT  
MTH/SY  
MTH/RT  
DSM3R/SY  
DSM3R/RT  
MTHICD9/ET  
CST/SC  
CST/HT  
CST/GT  
PSY/PT  
PSY/HT  
PSY/ET  
MTHMST/PT  
MTHMST/SY  
LCH/PT  
MSH/HT  
MSH/HS  
MSH/PM  
RCDSA/AB  
RCDSY/AB  
RCDAE/AB  
RCD/AB  
RCDSA/OA  
RCDSY/OA  
RCDAE/OA  
RCD/OA  
RCDAE/AA

RCD/AA  
CSP/PT  
CSP/SY  
CSP/ET  
MTH/DT  
BRMP/MH  
BRMS/MH  
DUT/MH  
DMD/MH  
FIN/MH  
FIN/EP  
INS/MH  
ITA/MH  
RUS/MH  
BRMP/SY  
BRMS/SY  
DUT/SY  
DMD/SY  
INS/SY  
ITA/SY  
RUS/SY  
BRMP/EP  
BRMS/EP  
DUT/EP  
DMD/EP  
DMDUMD/PT  
DMDUMD/ET  
DMDUMD/RT  
WHOFRE/OS  
WHOGER/OS  
WHOPOR/OS  
WHOSPA/OS  
WHOFRE/HT  
WHOGER/HT  
WHOPOR/HT  
WHOSPA/HT  
WHOFRE/PT  
WHOGER/PT  
WHOPOR/PT  
WHOSPA/PT  
WHOFRE/IT  
WHOGER/IT  
WHOPOR/IT  
WHOSPA/IT  
CPTSP/PT  
DMDICD10/PT  
DMDICD10/HT

ICPCBAQ/PT  
ICPCDAN/PT  
ICPCDUT/PT  
ICPCFIN/PT  
ICPCFRE/PT  
ICPCGER/PT  
ICPCHEB/PT  
ICPCHUN/PT  
ICPCITA/PT  
ICPCNOR/PT  
ICPCPOR/PT  
ICPCSPA/PT  
ICPCSWE/PT  
ICPCBAQ/CP  
ICPCDAN/CP  
ICPCDUT/CP  
ICPCFIN/CP  
ICPCFRE/CP  
ICPCGER/CP  
ICPCHEB/CP  
ICPCHUN/CP  
ICPCITA/CP  
ICPCNOR/CP  
ICPCPOR/CP  
ICPCSPA/CP  
ICPCSWE/CP  
MTHMSTFRE/PT  
MTHMSTITA/PT  
SRC/RPT  
SRC/RHT  
SRC/RAB  
SRC/RSY  
SRC/VPT  
SRC/VAB  
SRC/VSY  
SRC/SSN

## **B.6 Relationship Attributes not Listed in the Semantic Network**

As of 2002AD:

adjectival\_form\_of  
classified\_as  
classifies  
clinically\_associated\_with  
clinically\_similar

closest\_related\_pdq\_diagnosis  
ddx  
default\_mapped\_from  
default\_mapped\_to  
dose\_form\_of  
form\_of  
has\_closest\_related\_pdq\_diagnosis  
has\_dose\_form  
has\_form  
has\_member  
has\_tradename  
has\_translation  
has\_version  
icd\_asterisk  
icd\_dagger  
mapped\_from  
mapped\_to  
member\_of\_cluster  
multiply\_mapped\_from  
multiply\_mapped\_to  
noun\_form\_of  
other\_mapped\_from  
other\_mapped\_to  
primary\_mapped\_from  
primary\_mapped\_to  
sib\_in\_branch\_of  
sib\_in\_isa  
sib\_in\_part\_of  
sib\_in\_tributary\_of  
similar  
ssc  
tradename\_of  
translation\_of  
uniquely\_mapped\_from  
uniquely\_mapped\_to  
version\_of