LEXICON UTILITY

TECHNICAL MANUAL/

DEVELOPER'S GUIDE

Version 2.0

September 1996
Revised October 2003

Revision History

Patch 25 (CSV)	pp. 7, 15-16, 22, 24-25, 28-33, 35, 38, 46, 52, 64-69	Oct 2003

Preface

Scope of the Manual

This manual provides technical information required to effectively set up and use the V*IST*A (Veterans Information System Technology Architecture, the new name for DHCP) Lexicon Utility. It also contains material useful in linking to the Lexicon Utility.

Audience

This manual's intended audience is Information Resource Management (IRM) personnel, Applications Coordinators (ADPACs), Clinical Coordinators, and developers.

Related Manuals:

Lexicon Utility User Manual
Lexicon Utility Installation Guide

Table of Contents

Introduction

V*IST*A's Lexicon Utility: An Overview

V*IST*A's Lexicon Utility is a dynamic dictionary of medical terms. The Lexicon maps coding schemes such as ICD-9, SNOMED, and DSM-III-R to major medical concepts. At the present time there are approximately 18 different coding schemes represented in the Lexicon. The Lexicon Utility can support other coding schemes that are unique to the VA, such as the codes used by the Social Work Service or US Code Title 38 Chapter 4 for Service Connected Disabilities.

Working with outside sources, the Lexicon updates its terminology as the source files incorporate new terminologies and classification codes. The flexibility offered by this approach is tremendous. The Lexicon can draw from sources such as ICD-10, Iliad, READ, SNOMED-3, and, DSM-IV while maintaining compatility with VA authoritative files. The Lexicon adjusts new terminology for use in the VA while retaining backward compatibility with older coding schemes (for example, transition from DSM-IIIR to DSM-IV). Software Services releases updates to the Lexicon on a periodic basis.

The Lexicon supports usage by all clinical areas. With the mapping of application-specific term files, such as radiology, medicine, etc., to the Lexicon, VHA achieves standardized clinical terminology. Terminology associated with HOST (Hybrid Open System Technology) applications can also be mapped to the Lexicon. This standardization on the part of V*IST*A and HOST applications permits information mobility within VHA and with other industry-wide systems.

The Lexicon has the capability of learning from individual users. If you enter a term that is not found in the Lexicon, the computer captures this term and stores it in a special file. The functional application continues to process data as required. On a periodic basis, the Salt Lake IRMFO automatically uploads this file for consideration in the next release of the Lexicon. Expert staff members review the contents of this file for possible inclusion in the next update of the Lexicon.

A specially designed interface permits the user to enter a medical term using familiar natural language. The computer codifies and stores this term, permitting retrieval and analysis by a wide variety of legitimate users of clinical data. This interface captures exactly what the user enters and maps it to a standardized term that is linked to a major concept. An application using the Lexicon can reflect what the user actually entered while maintaining the links to the needed coding system and the Lexicon.

The Lexicon's initial implementation was with the Problem List Application. Version 1.0 was completed on September 6, 1994 and released to the field on January 28, 1995.

The initial release of the utility was conceived and planned as a proof of concept. While not complete, the design of the Lexicon includes the ability to evolve as new demands are placed upon it.

Requirements

The following software requirements have been stated for the Lexicon Utility. We have marked each Requirement as *MET* or *PENDING*.

Problem List Expert Panel

Single unique concepts   *MET*

Must support natural/native terminology   *MET*

All terms must map to ICD-9 (rescinded)

Must specifically include problem list terminology from NANDA, Social Work, and Dental, as well as clinical findings and symptoms or other terminologies (to be identified)
                                                                 MET

Must be flexible enough to map various coding schemes (examples follow)   *MET*

ICD-9-CM	International Classification of Diseases (WHO/HHS)
CPT-4	Current Procedural Terminology (AMA)
HCPCS	HCFA Current Procedural Coding System
DSM-IIIR	Diagnostic & Statistical Manual of Mental Disorders (APA)
SNOMED	Systematized Nomenclature of Medicine (CAP)
NANDA	Classification of Nursing Diagnosis (NANDA)
NIC	Nursing Intervention Classifications
NOC	Nursing Outcomes Classifications
HHCC	Home Health Care Component
OMAHA	Omaha Nursing Diagnosis and Interventions
SCC	Service Connected, US Code, Title 38, Chapter 4
ACR	Index for Radiological Diagnosis (ACR)
AI/RHEUM	Disease/Findings Knowledge Base (NLM)
COSTAR	Computer Stored Ambulatory Records Term File
COSTART	Coding Symbols Thesaurus for Adverse Reaction Terms (FDA)
CRISP	Computer Retrieval of Info. on Scientific Projects (NIH)
DXPLAIN	Diagnostic Prompting System
UMDNS	Universal Medical Device Nomenclature System (ECRI)

Must be usable by a variety of applications and utilities within V*IST*A   *MET*

Must support addition of terms at the site level   *MET*

Must be able to migrate to a nomenclature selected for use throughout V*IST*A when that decision occurs   *MET*

Site modification to include edit display text (rescinded) and site specific shortcuts and synonyms (MTLU for Version 1.0, context sensitive shortcuts for Version 2.0)
                                                                 MET

Test Sites/Usability Testing

Group terms by clinical categories (e.g., ICD-9 Major Clinical Categories)
PENDING

Place the most frequently used terms at the top of the selection list   *MET*

Accept the provider narrative if the search fails or the term was not found
MET

Build subsets of terms (based on specialty or clinic) restricting the domain of the lookup
MET

Applications

Provide Silent Lookup using a multi-term search (CPRS)   *MET*

Build shortcuts for terms (based on specialty or clinic) gaining immediate access to terms without the benefit of a search (PL)   *MET*

Provide shortcut as a user default (PL)   *MET*

Add CPT terminology and codes to the Lexicon Utility (multiple applications)
MET

Provide entry point to retrieve an internal entry number based on a code from a classification system (PCE)   *MET*

E3R System

The following E3Rs either directly impact the Lexicon Utility or concern other packages with requirements that may impact the Lexicon Utility.

E3R 5000   Lexicon   Lookup Error
             A term with a known ICD code returned 799.9 rather than the
             correct ICD. This is caused by a number of ICD codes in the
             Lexicon being "truncated." Review and fix truncated codes.
                                                              MET

E3R 5586   IB   Flagging Sensitive DX
             Implication for the Lexicon Utility: The Lexicon Utility should
             have an entry for "Sensitive Diagnosis"
                                                              MET

E3R 5762   Problem List   Choose Multiple Problems
             Implication for the Lexicon Utility: While this E3R applies to the
             "Picklist" in the Problem List application, it may be reasonable to
             imply that such functionality be applied to the lookup of the
             Lexicon Utility using the same justification presented in the E3R
             Report.   *MET*

E3R 5841   Kernel   Accept Perfect Match
             If a search finds a perfect match, that entry should be placed at the
             top of the selection list.   *MET*

E3R 5874   Problem List   Code 799.9 Assigned
             Implication for the Lexicon Utility: Either the .01 field in Problem
             List must be changed to other than the ICD-9 file or the Lexicon
             Utility must have ICD codes for every term that could feasibly be
             considered a patient problem.   *MET*

E3R 6370   Problem List   Problem List Access to Allergies &
                                        Reactions
             Implication for the Lexicon Utility: Add Drug Ingredients (50.416),
             Drug Classes (50.605), Drugs (50.6), Allergies (120.82), and Signs
             and Symptoms (120.83) to the Lexicon Utility
                                                              PENDING

Changes since Version 1.0

Terminology   Added

We added the Current Procedural Terminology (CPT-4) and the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) to the Lexicon Utility.

Namespace LEX   Changed

We changed the namespace from GMPT to LEX. We renamed all routines and package variables from GMPT* to LEX* to conform to the new namespace.

Global Root ^LEX   Changed

We changed the global root from ^GMP and ^GMPT to ^LEX and ^LEXT respectively. This helps to prevent inadvertent deletion of Lexicon data. The difference between killing ^TMP and ^GMP is one character on a standard QWERTY keyboard, both controlled by the same finger and located approximately a quarter of an inch from each other.

Concept Usage file 757.001   Added

The Concept Usage file records the usage of Lexicon by application performing lookups using the Special Lookup Routines. This file later determines the order of the selection list during lookup. The more frequently used terms "float" to the top of the list.

Expression Type file 757.011   Added

The Expression Type field (757.01) has been changed from a set of codes to a pointer to the new file Expression Type, #757.011.

Shortcut Functionality   Added

The Shortcut File 757.4 and the Shortcut Context file 757.41 were added to support shortcuts by context.

Shortcut User Default   Added

Context sensitive shortcuts are now a user default. For example, the user may have one set of shortcuts for searching using the Problem List application and another set defined for another application.

Excluded String File   Deleted

Excluded String File #757.041 was deleted. This file was required to run the Lexicon Special Lookup Routine under the Multi-Term Lookup Utility (MTLU) V. 1.0 running on the VAX. With the upgrade of the MTLU and conversion of VAX to Alpha, this file no longer serves a purpose.

Silent Lookup   **Added**

A Silent Lookup was added in support of GUI. The Lexicon Special Lookup Routine has been modified to call the Silent Lookup so that the behavior of the "loud" lookup would be identical to the "silent" lookup. This lookup also includes:

- Reordering the selection list with the most frequently used at the top
- Placing the exact match at the top of the selection list
- Returning a local array

Codes file 757.02   **Changed**

The Codes file was modified to include a status multiple to record code activation dates and inactivation dates. The "ACT" cross-reference is generated from this multiple. This cross reference provides the Lexicon the ability to retrieve the appropriate code and text based on a date supplied by the calling routine.   If a date is not supplied, then TODAY is used.

Coding Systems File 757.03   **Changed**

The Coding Systems file was modified by making the SOURCE TITLE field #2 an identifier for the purpose of lookup while editing the Change File #757.01.

Change Log File 757.9   **Added**

This is a simple log file recording the changes made to Lexical files under the Lexical Services to include the date of change, the type of change (ICD, CPT, etc), contributing agency, version number, and the reason for change.

Change Type File 757.901   **Added**

This is a listing of the different types of change files provided to Lexical Services (i.e., ICD, CPT, etc).

Contributing Agency File 757.902   **Added**

This is a list of the Standards Development Organizations (SDOs) or other agencies that contribute changes to Lexical services.

Import Global File 757.903   **Added**

This file keeps a record of the contents and processing results of the Lexicon data export global ^LEXM, to include the date and time the data was imported, build name, and the files that were updated.

Change File 757.91   **Added**

This is an item by item listing of the changes that occurred during the import of a change. It includes the classification code, classification system, short text, version, effective date, status, reason for status, previous code, previous short text, Lexicon entry, ICD entry, ICP entry, CPT entry, short description, long description, and the Lexicon description.

Lexicon Example Entry—Migraine Headache

Terms

Concept:	Migraine	
Synonyms:	Hemicrania	Directly Linked to Concept
	Migraine Headache	Directly Linked to Concept
Variants	Hemicrania	Indirectly Linked (via Synonym)
	Hemicranias	Indirectly Linked (via Synonym)
	Migraines	Directly Linked to Concept

Definition

A periodic vascular headache, usually temporal, and unilateral in onset, commonly associated with irritability, nausea, vomiting, constipation or diarrhea, and often photophobia.

Semantic Class/Type

Diseases/Pathologic Processes   Signs and Symptoms
                                          Disease or Syndrome

Classification Systems/Codes

COSTAR	Computer Stored Ambulatory Records Term File	485/486
COSTART	Coding Symb Thesaurus - Adverse Reaction Terms	MIGRAINE
CRISP	CRISP Thesaurus, Nat Inst of Health	2056-6472
ICD-9-CM	Intl' Class of Diseases, 9th Rev, Clin Mod	346.9/346.
SNOMED D	Sys Nomen of Med, Diagnostic, 2nd Ed	D-8250

Package Components

Manager Options

Lexicon Management Menu   Menu
[LEX MGT MENU]

This menu contains three sub-menus including a user default menu, an edit menu, and the general Lexicon Utility menu described in the next section under **USER/MANAGER OPTIONS**.

Defaults . . .   Menu
[LEX MGR DEFAULTS]

This menu contains two options, one to modify user defaults and one to list user defaults.

Edit User/User Group Defaults
[LEX MGR USER DEFAULTS]   **LEXDMG**

This option allows a manager to modify user defaults (filter, display, shortcuts, vocabulary) for either a single user or a group of users (based on service or location).

List User/User Group Defaults
[LEX MGR LIST DEFAULTS]   **LEXDD1**

This option allows a manager to list user defaults to a device (filter, display, shortcuts, or vocabulary) for either a single user or a group of users (based on service or location). It also allows the manager to limit the listing to users with or without defaults.

Edit Lexicon . . .   Menu
[LEX MGR EDIT LEXICON]

Very few fields in the Lexicon may be edited. This menu option contains two sub-options that allow managers to edit those [few] fields. One sub-option allows a manager to edit a term definition and the other to edit shortcuts (by context).

Edit Term Definition
[LEX MGR EDIT DEFN]   **LEXEDF1**

This option lets you edit the definition of an expression. This definition is accessible during searches using the Lexicon help routine.

Edit Shortcuts by Context (New)
[LEX MGR EDIT SHORTCUTS]   **LEXSC**

This option lets managers add or delete shortcuts in a selected context.

Lexicon Utility . . .   **Menu**
[LEX UTILITY]

This option is described under the User/Manager Options section below.

User/Manager Options

Lexicon Utility   **Menu**
[LEX UTILITY]

This menu contains two sub-options, "Look-up Term" and "User Defaults."

Look-up Term
[LEX LOOK-UP]   **LEXLK**

This option lets you perform a simple lookup in the Lexicon and displays all the information known about the term selected.

User Defaults . . .
[LEX USER DEFAULTS]   **Menu**

This menu contains five sub-options that let a single user modify or list user defaults, including the search filter, the display format, the preferred vocabulary, and shortcuts.

Filter
[LEX USER FILTER]   **EN^LEXDFL**

This option lets the users either select or create their own filters to use while conducting searches in the Lexicon. The filter limits the response of the lookup based on the conditions found in the filter.

Display
[LEX USER DISPLAY]   **EN^LEXDCC**

This option lets the user either select or create a display format which is used in presenting the selection list during searches in the Lexicon.

Vocabulary
[LEX USER VOCABULARY]   **EN^LEXDVO**

This option lets the user select a default vocabulary (or subset of the Lexicon) to be used during a lookup (i.e., Nursing, Social Work, etc.).

Shortcuts   New
[LEX USER SHORTCUTS]   **EN^LEXDCX**

This option lets the user select a default set of shortcuts to use to rapidly access the Lexicon without the benefit of the special lookup.

List Defaults
[LEX USER DEFAULT LIST]   **EN^LEXDDS**

This option lets the user list the current defaults (by application) to a device (terminal or printer).

Files, Pointers and Relationships

LOOK-UP RELATED FILES

USER DEFAULT FILES

Concept Usage 757.001

Coding Systems 757.03

New Person 200

Subsets 757.21

Subset Definition 757.2

Shortcuts 757.4

Shortcut Context 757.41

Replacement Words 757.05

Look-Up Screens 757.3

Excluded Words 757.04

Displays 757.31

Codes 757.02

Major Concept Map 757

Expressions 757.01

Expression Type 757.011

Expression Form 757.014

Semantic Map 757.1

Unresolved Narratives 757.06

Semantic Class 757.11

Semantic Type 757.12

Other Applications
(Problem List, AICS, Text Integration Utility, etc.)

LEXICAL ATTRIBUTE FILES

OTHER
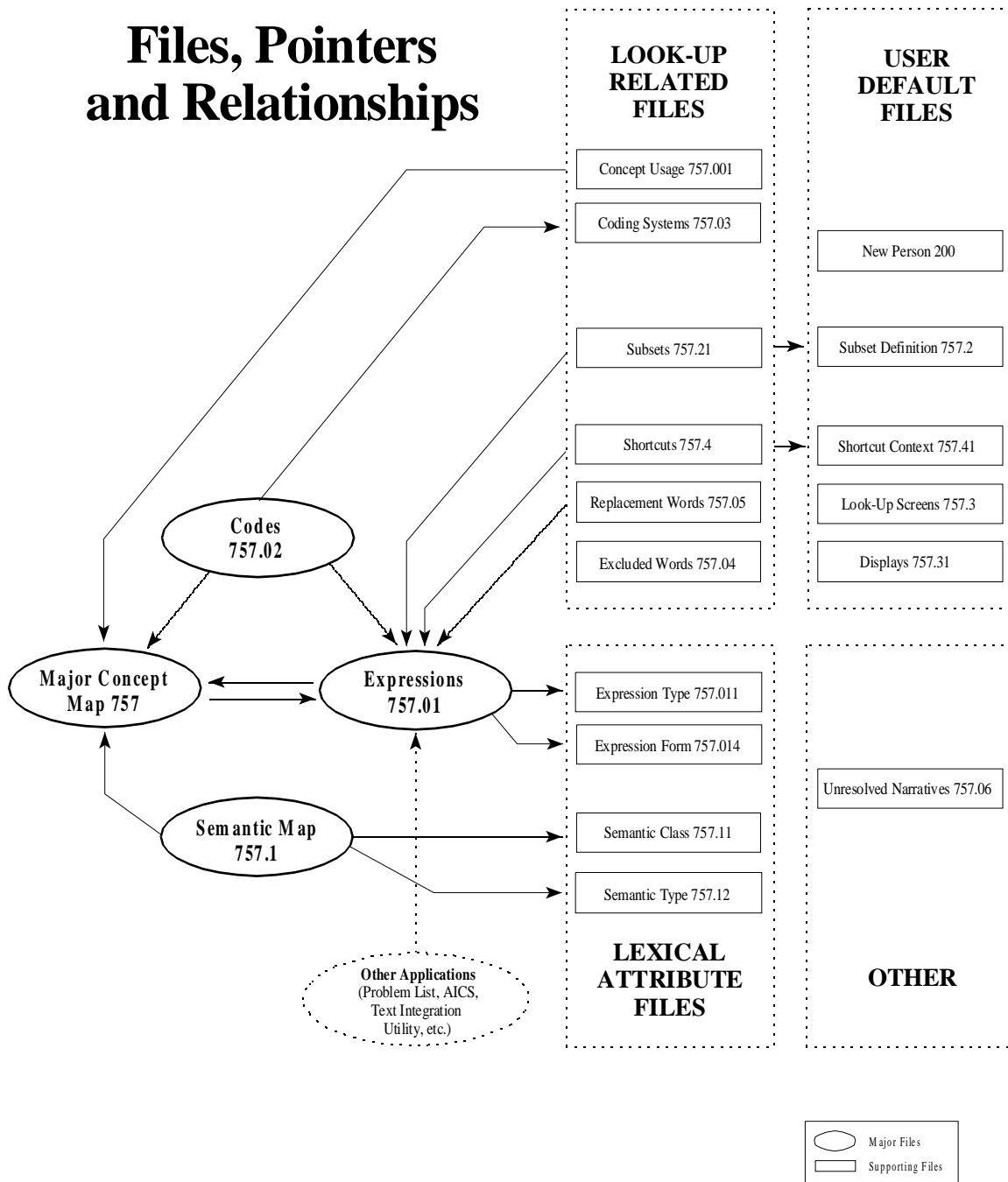
Major Files
Supporting Files

Chart of the Relationships Between Lexicon File Components

Lexicon Files, Fields, and Indexes

On-line documentation for the Lexicon Utility's files, fields, and cross-references may be obtained by using the Fileman's Data Dictionary Listing Utility for the file range 757-757.41 as follows:

```
   >D ^DI


   VA FileMan 21.0


Select OPTION: DATA DICTIONARY UTILITIES
Select DATA DICTIONARY UTILITY OPTION: LIST FILE ATTRIBUTES
 START WITH WHAT FILE: SHORTCUT CONTEXT// 757 MAJOR CONCEPT MAP
                                          (99861 entries)
     GO TO WHAT FILE: MAJOR CONCEPT MAP// 757.41  SHORTCUT CONTEXT
                                          (3 entries)
Select LISTING FORMAT: STANDARD//   <Enter>
DEVICE:   <Enter>  VAX

STANDARD DATA DICTIONARY #757 -- MAJOR CONCEPT MAP FILE
STORED IN ^LEX(757,  (99861 ENTRIES)   SITE: SALT LAKE IRMFO
DATA           NAME          GLOBAL       DATA
ELEMENT  TITLE               LOCATION     TYPE
    ---------------------------------------------------------------
-------------------------------------------
This file is a map of Major Concepts within the Lexicon Utility and
contained in the expression file (#757.01). While the primary purpose
of this file is for file maintenance, it also supports various other
functions such as the display of classification codes by linking
concepts to codes, and the ability to filter out unwanted search
responses by linking concepts to semantic classes and types. NOTE:
Data Entries in this file should not be altered by the site.


        DD ACCESS: @
        RD ACCESS: @
        WR ACCESS: @
        DEL ACCESS: @
        LAYGO ACCESS: @
        AUDIT ACCESS: @


POINTED TO BY: MAJOR CONCEPT field (#.01) of the CONCEPT USAGE File
(#757.001)
        MAJOR CONCEPT field (#1) of the EXPRESSIONS File (#757.01)
        MAJOR CONCEPT field (#3) of the CODES File (#757.02)
        MAJOR CONCEPT field (#.01) of the SEMANTIC MAP File (#757.1)

   CROSS
   REFERENCED BY: EXPRESSION(B)

757,.01  EXPRESSION               0;1 POINTER TO EXPRESSIONS FILE
                                  (#757.01) (Required)

   OUTPUT TRANSFORM: S Y=$P(^LEX(757.01,Y,1),U,1)
LAST EDITED:   APR 19, 1996
```

```
    DESCRIPTION:      Pointer to the clinical expression in the
Expression file (#757.01) which represents the preferred term for the
Major Concept.

    UNEDITABLE

    CROSS-REFERENCE:  757^B
    1)= S ^LEX(757,"B",$E(X,1,30),DA)=""
    2)= K ^LEX(757,"B",$E(X,1,30),DA)

    ^LEX(757,"B",MCE,IEN) - where MCE is a pointer to the expression
in the Expression file #757.01 which represents a clinical Major
Concept Expression, and IEN is the Internal Entry Number in the Major
Concept Map file #757 .......................

    ........
```

You may also retrieve the on-line documentation for any single file listed below by entering a single file number at "START WITH WHAT FILE:" prompt and not entering a file number at the "GO TO WHAT FILE:" prompt. The following is a listing of file numbers and file names contained in the Lexicon Utility package:

757	MAJOR CONCEPT MAP
757.001	CONCEPT USAGE
757.01	EXPRESSIONS
757.011	EXPRESSION TYPE
757.014	EXPRESSION FORM
757.02	CODES
757.03	CODING SYSTEMS
757.04	EXCLUDED WORDS
757.05	REPLACEMENT WORDS
757.06	UNRESOLVED NARRATIVES
757.1	SEMANTIC MAP
757.11	SEMANTIC CLASSES
757.12	SEMANTIC TYPES
757.21	SUBSETS
757.3	LOOK-UP SCREENS
757.31	DISPLAYS
757.4	SHORTCUTS
757.41	SHORTCUT CONTEXT
757.9	CHANGE LOG
757.901	CHANGE TYPE
757.902	CONTRIBUTING AGENCY
757.903	UPDATE HISTORY
757.91	CLASSIFICATION CHANGE FILE

Routines Supporting the Lexicon

Special Lookup

Description

Because of the requirement to "reorder the list" after the search and before user selection, this lookup now calls the Silent Lookup so that the search results from the Special Lookup and Silent Lookup remain consistent. The previous special lookup called the API to the Kernel Toolkit Multi-Term Lookup Utility (MTLU).

These routines are responsible for:

- Obtaining the user input search string and passing it to Silent Lookup, then prompting for and getting the user's response.

- Storing and mailing Unresolved Narratives. An Unresolved Narrative occurs when the lookup either does not find a match or when it finds a match but the user, not satisfied with the results, does not select an expression from the list. These Unresolved Narratives are rolled-up into a mail message and submitted for inclusion in later releases of the Lexicon.

- Returning the standard Fileman variables and one additional variable Y(1) containing an active ICD code when one exists.

Routines

LEXA1	Lookup (user input)
LEXA2	Selection
LEXA3	Display
LEXA4	Unresolved Narratives

Silent Lookup (New)

Description

This lookup searches the Lexicon and responds by building global and local arrays.

Routines

Lookup
LEXA	Lookup
LEXASC	Lookup by Shortcuts
LEXAB	Exact Match "B" Index
LEXABC	Lookup by Codes
LEXALK	Lookup by Keywords
LEXAFIL	Lookup with Filter

Interpret User Response
LEXAR	Interpret User Response
LEXAR2	Up-arrow, Jump, Null
LEXAR3	Help, Definition, MAX, Refresh
LEXAR4	Select Entry
LEXAR5	Select Entry
LEXAR6	Unresolved Narratives
LEXAR7	MAIL Narratives

Miscellaneous
LEXAL	List Builder (Global)
LEXAL2	List Builder (Array)
LEXAM	Setup/Parse User Input
LEXASO	Get Classification Sources
LEXAS	Check User Input
LEXAS2	Check User Input
LEXAS3	Check User Input
LEXAS4	Check User Input
LEXAS5	Check User Input
LEXAS6	Check User Input
LEXAS7	Check User Input

Set-up

Routines

LEXMTLU	Set up for XTLKKWL API
LEXSET	Set up App/User for Lookup
LEXSET2	Set up App/User for Lookup
LEXSET3	Set up App/User for Lookup
LEXSET4	Set up Functions
LEXSET5	Set up App/User for Lookup

Setting/Displaying User Defaults

Description

Currently, there are only four types of user defaults

1) Vocabulary: The word index to use during the search.
2) Display: A string of classification coding systems to display during the search.
3) Filter: A condition for selecting terms based on semantic or classification systems.
4) Shortcut Context: A set of keywords resulting in immediate return of an expression.

These routines allow users and managers to either select from pre-existing defined default values or create their own.

Default	Select Default from a List	Create your own Default
Filter	Yes	Yes
Display	Yes	Yes
Shortcuts	Yes	No
Vocabulary	Yes	No

Additionally, managers may set defaults for multiple users based on service or location. Both users and managers may display user defaults. Users can only display their own defaults in a "human readable" format much like that shown in the section "Controlling the View." A manager may display the defaults for a single user or a user group, showing the actual data stored as the default values. Because of the complexity of the filtering by semantic classes and types (see "Controlling the View"), a large number of these routines (LEXDFL*) are devoted to the creation of these filtering strings.

Routines

Manager
LEXDMG	Manager Option
LEXDMGU	Select User/User Group
LEXDMGV	Verify Selections
LEXDMGO	Overwrite Existing Defaults
LEXDMGT	Task to Modify Defaults

Default Filter
  LEXDFL   Default Filter
  LEXDFLS   Select a Filter
  LEXDFLC   Create a Filter
  LEXDFLT   Filter Type
  LEXDFST   Filter by Semantics
  LEXDFSB   Include/Exclude Classes/Types
  LEXDFSI   Include Semantic Classes/Types
  LEXDFSE   Exclude Semantic Classes/Types
  LEXDFSO   Filter by Sources
  LEXDCCC   Create Filter by Source
  LEXDFSS   Filter by Sources and Semantics

Default Display
  LEXDCC   Default Display
  LEXDCCS   Select a Display
  LEXDCCC   Create a Display

Default Vocabulary
  LEXDVO   Default Vocabulary
  LEXDVOS   Select Default Vocabulary

Default Shortcut Context
  LEXDCX   Default Shortcut Context
  LEXDCXS   Select Default Shortcut Context

Display Defaults
  LEXDD1   Display Defaults
  LEXDD2   Build List
  LEXDD3   Display List
  LEXDD4   List Elements
  LEXDDS   Single User Defaults
  LEXDDSD   Single User Display
  LEXDDSP   Single User Parse
  LEXDDSS   Single User Save

 Translate User Defaults
  LEXDDT1   Translate String
  LEXDDT2   Concatenate Translated String
  LEXDDTC   Translate Shortcut String
  LEXDDTD   Translate Display String
  LEXDDTF   Translate Filter String
  LEXDDTV   Translate Vocabulary String

 Miscellaneous
  LEXDFN   Default Names
  LEXDFN2   Default Names
  LEXDSV   Save Defaults
  LEXDM   Select/Create/Delete Default
  LEXDM2   Verify Default Delete

LEXDM3	Default Name
LEXDM4	Get Application/User/Service/Location

Edit

Description

These routines provide managers at a site with the ability to edit the definition and the shortcuts associated with an expression. The definition is used as part of the Lexicon's help routines to assist in the selection of a term from a selection list. An edited definition is mailed to SLC IRMFO for review and possible inclusion into a future release. The shortcuts are used to associate a keyword to a specific expression to rapidly access the Lexicon without engaging the look-up engine.

Routines

LEXEDF1	Select/Display/Mail Edited Definition
LEXEDF2	Edit Definition
LEXSC	Edit Shortcuts
LEXSC2	Edit Shortcuts
LEXSC3	Edit Shortcuts

Indexing and Input Transformations

Description

Entry points for these routines are embedded into the Data Dictionary to maintain indexes and to control input transformations.

The indexes that are controlled in this manner include:

Index	File	Subscript	Routine
Main Word Index	757.01	AWRD	LEXNDX1
Subset Word Index	757.21	"A"_SUBSET	LEXNDX2
Application Index	757.2	APPS	LEXNDX2
Linked Word Index	757.01	AWRD	LEXNDX3
Linkages	757.05	ALINK	LEXNDX4/5
String Index	757.01	ASL	LEXNDX6
Shortcut Index	757.4	ARA	LEXNDX6

Input transformations controlled in this manner include:

Field	File	Routine
Word (Excluded)	757.04	LEXERI
Word (Replace)	757.05	LEXERI
Replacement Term	757.05	LEXERI

Routines

LEXNDX1	Main Word Index
LEXNDX2	Sub-Set Word Index
LEXNDX3	Replacement Words
LEXNDX4	Linked Words Index
LEXNDX5	Linked Words
LEXNDX6	Index Strings/Shortcuts
LEXERF	Functions for Exc/Rep Words
LEXERI	Exc/Rep Input Transformations

Problem List-Specific

Routines

LEXPL	Problem List Survey
LEXPLEM	Problem List Update w/Lexicon Exact Match
LEXPLIA	Problem List Update of Inactivated ICD Codes
LEXPLUP	Problem List Update for ICD 799.9

Miscellaneous

Routines

LEXCODE	Convert Code to IEN
LEXSRC	Convert IEN to Code
LEXSRC2	Check Status of a Code
LEXTOLKN	Parse into Words
LEXPRNT	Print utilities
LEXHLP	Help
LEXU	Miscellaneous Utilities
LEXLK	Demo Lookup
LEXLK2	Demo Lookup
LEXCHGF	View Change File
LEXCHGF2	View Change File (cont)

This page intentionally left blank.

Package Characteristics and Usage

Supported Callable Routines

The following routines are supported upon release of the Lexicon Utility V. 2.0.

LEXSET

CONFIG^LEXSET(<Application>,<Subset>,<Date>)

This entry point sets up the lookup variables for searching the Lexicon. It is not necessary to use this entry point for either Special Lookup or Silent Lookup since this entry point is embedded in Silent Lookup.

You should use this entry point when:

1) A search is to be conducted using the Kernel Toolkit's Multi-Term Lookup Utility (MTLU)

2) It is desirable for an application to control the user defaults for a given situation (for example, the application may require the return of an ICD code).

This entry point searches the Subset Definition file (#757.2) and retrieves the application defaults, the subset defaults, and user defaults. Then it merges the three sets of defaults into a single list of defaults based on the information it has retrieved. For instance, if the application has defined the Overwrite flag as "true," then the application defaults have precedence over any user defaults found and the user defaults are ignored. If the global root is anything other than ^LEX(757.01, then the user defaults for vocabulary and filter are ignored while the user defaults for display and shortcuts are used.

Input

   <**Application**>   This is the application identification and may be in the form of a name (e.g., "PROBLEM LIST"), a namespace (e.g., "GMPL") or a pointer (e.g., Internal Entry Number—IEN) from an application definition in the Subset Definition file (#757.2). The default value for this parameter, if it is not supplied, is one (1), pointing to the Lexicon application definition. This is the same as the Application input parameter for LOOK^LEXA. A list of appropriate application identifiers is found in the Subset Definition file #757.2 in the AN index. At the time of this writing it included:

Application ID	Application or Purpose
CPT	CPT-4 Procedures
DSM	Mental Health DSM-4
GMPL	Problem List
ICD	ICD-9-CM Diagnosis
LEX	Generic Lexicon Utility
VAC	VA Frequently used codes

<**Subset**> This parameter represents the vocabulary subset to use during the search. This parameter is passed as a subset name (e.g., "NURSING"), or the subset mnemonic (e.g., "NUR") or as a pointer to the Subset Definition file (#757.2). The default value for this parameter, if it is not supplied, is one (1) pointing to the main vocabulary (WRD subset) of the Lexicon located in file 757.01 and indexed by "AWRD". This is the same as the Subset input parameter for LOOK^LEXA. A list of appropriate vocabulary subsets is found in the Subset Definition file #757.2 in the "AA" and "AB" indexes. At the time of this writing it included:

Subset ID	Purpose
DEN	Dental Terminology
IMM	Immunologic Terminology
NUR	Nursing Terminology
SOC	Social Work Terminology
WRD	General Use (default)
CPT	CPT Procedures
DSM	Mental Health DSM-IV
ICD	ICD-9-CM Diagnosis
NIC	Nursing Interventions
PL1	Problem List #1 General
PL2	Problem List #2 ICD Diagnosis and Procedures
VAC	VA Frequently used codes (ICD, ICP, DSM, CPT)

<**Date**> This is a date in Fileman format used to return the code that is active on the date supplied. If the date is not passed, then TODAY is used.

Output

When LEXQ=1   If the variable LEXQ does not exist or is preset to 1, then the merged set of default values are placed in the global array ^TMP("LEXSCH",$J) as in the case of a standard DIC lookup or Silent Lookup. The following is a brief summary of the global array:

Global Array Segment	Purpose
^TMP("LEXSCH",$J,"ADF",0)	Application Default Flag
^TMP("LEXSCH",$J,"APP",0)	Application
^TMP("LEXSCH",$J,"DIS",0)	Display
^TMP("LEXSCH",$J,"FIL",0)	Filter
^TMP("LEXSCH",$J,"FLN",0)	File Number
^TMP("LEXSCH",$J,"GBL",0)	Global (DIC)
^TMP("LEXSCH",$J,"IDX",0)	Index
^TMP("LEXSCH",$J,"LEN",0)	List Length
^TMP("LEXSCH",$J,"LOC",0)	Hospital Location
^TMP("LEXSCH",$J,"OVR",0)	Overwrite User Default Flag
^TMP("LEXSCH",$J,"SCT",0)	Shortcuts
^TMP("LEXSCH",$J,"SVC",0)	Service
^TMP("LEXSCH",$J,"UNR",0)	Unresolved Narrative Flag
^TMP("LEXSCH",$J,"USR",0)	User (DUZ)
^TMP("LEXSCH",$J,"VOC",0)	Vocabulary

When LEXQ=0   If the variable LEXQ=0, then you should define the variable X as the user input and the merged set of default values are set into the appropriate local variables for making a direct call to the MTLU via the entry point ^XTLKKWL. The following variables are returned:

Variable	Content
DIC	Global Reference (root)
DIC("S")	Search Filter (MUMPS code)
DIC(0)	Search Conditions (codes)
LEXAP	Application (pointer to file 757.2)
LEXQ	Silent lookup flag (codes)
LEXSHOW	Displayable Codes (free text)
LEXSUB	Subset (free text)
LEXUN	Unresolved Narratives (codes)
X	User input (free text)
XTLKGBL	Global Reference (root)
XTLKHLP	Help (MUMPS code)
XTLKKSCH("DSPLY")	Display (routine entry point)
XTLKKSCH("GBL")	Global Reference (root)
XTLKKSCH("INDEX")	Index to use ("A"_Subset)
XTLKSAY	MTLU display (codes)
XTLKX	User input (free text, same as X)

LEXU

$$ICDONE^LEXU(<IEN>,<Date>)
$$CPTONE^LEXU(<IEN>,<Date>)
$$DSMONE^LEXU(<IEN>,<Date>)

These entry points (extrinsic functions) allow an application to retrieve a single code for a given classification system (ICD-9, CPT-4, and DSM-IV) and for a given internal entry number (IEN).

Input

<IEN>	This is an Internal Entry Number from the Lexicon Expression file #757.01.
<Date>	This is a date in Fileman format used to return the code that is active on the date supplied. If the date is not passed, then TODAY is used.

Output

Code	A single classification code, if one is found, or null, if no code is found.

$$ICD^LEXU(<IEN>)

This entry point (extrinsic function) allows an application to retrieve a series of ICD codes for a given internal entry number (IEN).

Input

<IEN>	This is an Internal Entry Number from the Lexicon Expression file #757.01.

Output

Codes	A string of ICD codes (one or more) delineated by a semi-colon or null if no codes are found.

Example

If **Y=33677^Diabetic Neuropathies** then the call **$$ICD^LEXU(+Y)** returns the string **250.60;357.2**, containing the ICD code for "Diabetes with Neurological Manifestations" and the ICD code for "Polyneuropathy in Diabetes."

LEXA

INFO^LEXA(\<IEN>,\<Date>)

This entry point allows an application to build the LEX("SEL") selection array for any term in the Lexicon based on the internal entry number from the Expression file (757.01). This entry point is meant to be used outside of the Lexicon lookup. It allows the application to retrieve information pertaining to the term to include synonyms, lexical variants, definitions, classification codes, semantic class and type, and linkages to the major VA classification files (e.g., ICD, CPT, DSM).

Input

\<IEN>	This is an Internal Entry Number from the Lexicon Expression file #757.01.
\<Date>	This is a date in Fileman format used to control which classification codes are returned based on the date supplied. If the date is not passed, then TODAY is used. Only active codes are returned.

Output

LEX("SEL")   Local array LEX("SEL") containing the following segments:

Array Segment	Content
LEX("SEL","EXP")	Expressions
LEX("SEL","SIG")	Definition when one exists
LEX("SEL","SRC")	Sources (classification codes)
LEX("SEL","STY")	Semantic Class and Type
LEX("SEL","VAS")	VA Sources

The LEX("SEL") array and all of its segments are described in the section titled "Special Variables" under the subheading "Local Arrays."

LEXCODE

EN^LEXCODE(SO,Date)

This entry point allows an application to retrieve the internal entry numbers (IENs) and the text (as the Fileman Y variable) of the expressions associated with a classification code.

Input

<SO >	This is a source code taken from one of the classification systems listed in Coding Systems file #757.03. E.g., ICD, CPT, DSM, NANDA, etc.
<Date>	This is a date in Fileman format used to ensure that the expressions returned are for active codes on the date supplied. If the date is not passed, then TODAY is used.

Output

LEX(<SAB>)	This is an array containing all of the terms linked to the code <SO>, regardless of classification system. The first subscript in the array, SAB is a 3 character mnemonic for the Sours Abbreviation of the coded entry found. The following is a representation of the array format:

> LEXS(0)=X
> LEXS(SAB,0)=#
> LEXS(SAB,#)=IEN^TERM

Source abbreviations (SAB) are listed in Appendix A under the heading ID.

The following is an example of the return array using code **309.24**

```
   D EN^LEXCODE("309.24")

   LEXS(0)=309.24
   LEXS("DS3",0)=1
   LEXS("DS3",1)=303668^Adjustment disorder with anxious mood
   LEXS("DS4",0)=1
   LEXS("DS4",1)=3273^Adjustment Disorder with Anxiety
   LEXS("ICD",0)=3
   LEXS("ICD",1)=268308^Adjustment reaction with anxious mood
   LEXS("ICD",2)=303668^Adjustment disorder with anxious mood
   LEXS("ICD",3)=3273^Adjustment Disorder with Anxiety
```

$$STATCHK^LEXSRC2(<SO>,<Date>)

EN^LEXCODE(SO)
This entry point is used to check the activation status of a code in the Lexicon Utility.

Input
  <SO>　　　　　This is a code taken from a classification system contained in the
　　　　　　　　　Lexicon (i.e., ICD, CPT, etc.)

  <Date>　　　　This is the date used to determine if a code was either active or
　　　　　　　　　inactive on a specific date. If not supplied, TODAY will be used as
　　　　　　　　　the date.
Output

　　　　　　　　　This function returns the following outputs:

  1 ^ IEN　　　　　Code is Active, and stored at ^LEX(757.02,IEN,0)
  0 ^ IEN　　　　　Code is Inactive, and stored at ^LEX(757.02,IEN,0)
  0 ^ -1　　　　　Code is Inactive, and not found in the Lexicon

Callable Routines by Agreement

LEXA

LOOK^LEXA(<User Input>,<Application>,<Page Length>, <Subset>,<Date>)

This entry point is silent and intended to support Graphical User Interface (GUI) development.

Input

<User's Input>   Equivalent to Fileman's variable X and contains the text to search for.

<Application>   This is the application identification and may be in the form of a name, namespace, or a pointer (Internal Entry Number - IEN) from an application definition in the Subset Definition file (#757.2).

The default value for this parameter, if it is not supplied, is one (1), pointing to the Lexicon application definition.

Included in this application definition are a number of application defaults which assist in searching the Lexicon. Application defaults include the global root, index, filter, display format, vocabulary, shortcuts, user default flag, overwrite user default flag, and the unresolved narrative flag. These are described in the Special Variable section of this manual.

At the time of this writing, there are six (6) application definitions:

Name	Namespace	IEN
Lexicon	LEX	1
Problem List	GMPL	4
ICD Diagnosis	ICD	12
CPT Procedures	CPT	13
Mental Health	DSM	14
ICD, CPT, and DSM Terminology	VAC	15

To conduct a search of the Lexicon using the application defaults for the Problem List, you may pass this parameter as:

Name   "PROBLEM LIST" - This form is not case sensitive, and can be found in either the "B" or "C" index of file 757.2.

Namespace   "GMPL" - Namespace - This form is not case sensitive, and can be found in the "AN" index of file 757.2.

Pointer   4 - This form is numeric, and is an Internal Entry Number (IEN) of file 757.2.

<Page Length>   This is a numeric value which controls the returning list length in the local array LEX("LIST"). See the section on "Building/Re-ordering the List" for how this variable is used. The default value for this parameter when not supplied is five (5).

<Subset>   This parameter represents the vocabulary subset to use during the search. These subsets are defined in the Subset Definition file (#757.2). This parameter may be in one of three forms. To use the "Nursing" subset, you may pass the parameter as:

Name   "NURSING" - This form is not case sensitive and may be found in either the "B" or "C" index of file 757.2.

Mnemonic   "NUR" - This form is not case sensitive. The mnemonic may be found in either the "AA" or "AB" index of file 757.2.

Pointer   2 - This form is numeric, and it is an Internal Entry Number (IEN) of file 757.2.

<Date>   This date is used to return the appropriate coding and classification information with the expression found during the search.

The default value for this parameter is TODAY.

Lookup by Code - When the user searches the Lexicon for a specific classification code (i.e., ICD, CPT etc.), the date will be used to return the expression of the code that was active on the date supplied.

Lookup by Expression (text) - When the list of possible expressions are presented to the user for selection, codes displayed with the expressions will only display those codes which were active on the date supplied.

Output

Full descriptions of the global and local arrays may be found in the section on Special Variables.

^TMP("LEXFND",$J,<freq>,<IEN>)

> This global array contains all of the entries found during the search. The <freq> is a negative number based on the frequency of use for a given term. IEN is the internal entry number in the Lexicon Expression File (757.01).

^TMP("LEXHIT",$J,<seq>)

> This global array contains the entries reviewed by the user. The Lexicon Utility reorders the list based on frequency of use and assigns a sequence number representing where on the list this entry is located.

LEX("LIST")

> This local array contains only those entries on the list which are currently being reviewed by the user. The third parameter to the look-up defines the length of this list.

LEXAR

EN^LEXAR(<Response >,<Date>)

<Response>   This entry point is designed to interpret the user's response to the selection list. It takes two types of input:

1) A user's response
2) A comment from an application

<Date>   This date is used to return the appropriate coding and classification information with the expression found during the search. This parameter only comes into play when the <Response> from the user is a number where the user is selecting an expression from the list.

User Responses

User Response	Action	Results
Null	PGDN	A null response has the effect of advancing the list by the number of entries defined by the third input parameter of the lookup. 1) If a null response is received from the user and the user is not at the end of the list, then the next # of entries is placed on the list in the local array.

```
LEX=<total matches found>
LEX("EXC")=<exact match concept -
optional>
LEX("EXM")=<exact match - optional>
LEX("LIST",#)=<entry>
LEX("LIST",#)=<entry>
LEX("LIST",#)=<entry>
LEX("LIST",#)=<entry>
LEX("LIST",#)=<entry>
LEX("MAX")=<last entry reviewed>
LEX("MIN")=<first entry review>
LEX("NAR")=<user input - optional>
```

2) If a null response is received from the user and the user is at the end of the list, then the list is killed and the dialog with the user is considered over. If the application uses the Unresolved Narratives the user narrative may be returned as the user's response to save the narrative in the Unresolved Narrative file (757.06).

```
LEX=0
LEX("NAR")=<user input>
```

| ^ | QUIT | Ends the dialog with the user by quitting the selection process, killing the selection list and setting LEX=0 |

```
LEX=0
LEX("NAR")=<user input>
```

| ^^ | EXIT | Ends the dialog with the application and kills all LEX namespaced variables. |

| ^# | JUMP | An up-arrow followed by a numeric value where the number is a specified entry on the list allows the user to jump from one location on the list to another. |

```
LEX=<total matches found>
LEX("EXC")=<exact match concept -
optional>
LEX("EXM")=<exact match - optional>
LEX("LIST",#)=<entry>
LEX("LIST",#)=<entry>
LEX("LIST",#)=<entry>
LEX("LIST",#)=<entry>
LEX("LIST",#)=<entry>
LEX("MAX")=<last entry reviewed>
LEX("MIN")=<first entry review>
LEX("NAR")=<user input - optional>
```

User Response	Action	Results
?	HELP	Places standard help in the array LEX("HLP").

```
LEX=<total matches found>
LEX("EXC")=<exact match concept -
optional>
LEX("EXM")=<exact match - optional>
LEX("HLP",#)=<help text>
LEX("LIST",#)=<entry>
LEX("LIST",#)=<entry>
LEX("LIST",#)=<entry>
LEX("LIST",#)=<entry>
LEX("LIST",#)=<entry>
LEX("MAX")=<last entry reviewed>
LEX("MIN")=<first entry review>
LEX("NAR")=<user input - optional>
LEX("LIST",#)=<entry>
LEX("MAX")=<last entry reviewed>
LEX("MIN")=<first entry review>
LEX("NAR")=<user input - optional>
```

| ?# | HELP | A question mark followed by a numeric value where the number is a specified entry on the list. If the entry specified has a definition, that definition is placed in the array LEX("HLP"). |

```
LEX=<total matches found>
LEX("EXC")=<exact match concept -
optional>
LEX("EXM")=<exact match - optional>
LEX("HLP",#)=<definition text>
LEX("HLP",#)=<definition text>
LEX("HLP",#)=<definition text>
LEX("HLP",#)=<definition text>
LEX("LIST",#)=<entry>
LEX("LIST",#)=<entry>
LEX("LIST",#)=<entry>
LEX("LIST",#)=<entry>
LEX("LIST",#)=<entry>
LEX("MAX")=<last entry reviewed>
LEX("MIN")=<first entry review>
LEX("NAR")=<user input - optional>
```

User Response	Action	Results
-	PGUP	Backs up the list by the number of entries defined by the third parameter of the lookup.

```
LEX=<total matches found>
LEX("EXC")=<exact match concept - optional>
LEX("EXM")=<exact match - optional>
LEX("LIST",#)=<entry>
LEX("LIST",#)=<entry>
LEX("LIST",#)=<entry>
LEX("LIST",#)=<entry>
LEX("LIST",#)=<entry>
LEX("MAX")=<last entry reviewed>
LEX("MIN")=<first entry review>
LEX("NAR")=<user input - optional>
```

User Response	Action	Results
#	SELECT	Selects an entry from the list and kills the list. The selected entry, and information pertaining to the entry, is placed in the array LEX("SEL").

```
LEX=<total matches found>
LEX("SEL")=<exact match - optional>
LEX("SEL","EXP",0)=<expressions>
LEX("SEL","EXP",#)=<IEN^expression text>
LEX("SEL","SIG",0)=<definition>
LEX("SEL","SIG",#)=<definition text>
LEX("SEL","SRC",0)=<sources>
LEX("SEL","SRC",#)=<source^code>
LEX("SEL","VAS",0)=<VA sources>
LEX("SEL","VAS",#)=<file^VP^code^IEN>
```

If a date is passed, then the sources listed in the LEX("SEL","SRC") array will contain active codes based on the date provided. If no date is passed, only active codes for TODAY will be listed.

User Response	Action	Results
User Input	Unresolved Narrative	If the list does not exist (in the case of receiving a null response at the end of the list), and the application uses unresolved narratives, and the user's original input string to the lookup is returned to the Lexicon, then the user's input and pertinent information about the search are saved in the Unresolved Narrative file (757.06).

Application Comment

Application Comment	Action
IEN^"Comment"	This is a special case of this entry point (similar to the use of Unresolved Narratives), and can only be used outside of the Lexicon Lookup (i.e. LEX does not exist). This response to this entry point allows an application to comment on an actual term contained in the Lexicon, save this comment in the Unresolved Narratives file (757.06), and have that comment returned to the developers along with the user's unresolved narratives. This special case is left up to the discretion of the calling application developers. Examples of application comments might be: IEN^Diagnostic term maps to 799.9 This type of comment might be used by an application that requires a valid ICD with a diagnostic term (as is the case with Problem List). If the Lexicon returns the term without an ICD or with an "ICD code not found" in the ICD-9 file (80), then the application could take advantage of this entry point to instruct the developers of the Lexicon to have Medical Records Technicians take a look at the term and evaluate the term to an appropriate ICD code for future iterations of the Lexicon. IEN^RBBB suggested shortcut - Right bundle branch block This type of comment might be used when the user input "RBBB" fails to return a selection list, and on a subsequent search the user entered "bundle branch block" and selected "Right bundle branch block," implying that RBBB was intended to have found "Right bundle branch block."

LEXD*

EN1^LEXD*(<Application>)

This is a series of callable routines established for the expressed purpose of setting user defaults for a given application and intended for applications to create options to change the user lookup defaults for that application. All of these routines assume DUZ is set to the current user. Two conditions must be met for these routines to be used:

1) The application indicated by the input parameter has an application definition in the Subset Definition file (#757.2).

2) The application definition permits user defaults (Application User Defaults flag in file 757.2 is set to 1).

Input

   <Application>   This is the application identification and may be in the form of a name (i.e., "PROBLEM LIST"), a namespace (i.e., "GMPL") or a pointer (Internal Entry Number - IEN) from an application definition in the Subset Definition file (#757.2). The default value for this parameter, if not supplied, is one (1), pointing to the Lexicon application definition. This is the same as the Application input parameter for LOOK^LEXA.

   EN1^LEXDFL(<Application>)

   This entry point allows a user to select or create a default filter for the application identified by the input parameter "application."

   EN1^LEXDCC(<Application>)

   This entry point allows a user to select or create a default display for the application identified by the input parameter "application."

EN1^LEXDVO(<Application>)

This entry point allows a user to select a default vocabulary for the application identified by the input parameter "application."

EN1^LEXDCX(<Application>)

This entry point allows a user to select a set of shortcuts (based on context) for the application identified by the input parameter "application."

Special Variables

Variables affecting the Lookup

LEXX

This variable is taken from the first input parameter to entry point LOOK^LEXA and consists of the user's input (search parameter) and equivalent to Fileman variable X.

LEXAP

This variable is taken from the second parameter to the entry point LOOK^LEXA and consists of the application identification as a pointer (Internal Entry Number - IEN) to an application definition in the Subset Definition file (#757.2). These application identifiers are indexed at ^LEXT(757.2,"AN",LEXAP,IEN)

Name	LEXAP	IEN
Lexicon	LEX	1
Problem List	GMPL	4
ICD Diagnosis	ICD	12
CPT Procedures	CPT	13
Mental Health (DSM)	DSM	14
ICD, CPT, and DSM Terminology	VAC	15

LEXLL

This variable is taken from the third parameter to the entry point LOOK^LEXA and is a numeric value and controls the returning list length in the local array LEX("LIST").

LEXSUB

This variable is taken from the fourth parameter to the entry point LOOK^LEXA and the second input parameter to the entry point CONFIG^LEXSET. It represents the vocabulary subset to use during the search. This subset is indexed at either the AA or AB index of the Subset Definition file (#757.2). This parameter may be in one of three forms:

For example, to use the "Nursing" subset you may pass the parameter as:

Name	"NURSING"	The name is found in either the "B" or "C" index of file 757.2.
Mnemonic	"NUR"	The mnemonic is found in either the "AA" or "AB" index of file 757.2.
Pointer	2	This is an Internal Entry Number (IEN) of file 757.2.

LEXQ   This
variable is used to tell the setup routine CONFIG^LEXSET which type of search
variable to return:

LEXQ=1   Returns
search variables for the "silent" lookup LOOK^LEXA (version 2+) and the "loud"
lookup ^LEXA1 (version 2+) which is called by ^DIC and uses silent calls. These
search variables are placed in the global array ^TMP("LEXSCH",$J). **The default
for LEXQ when it does not exist is 1.**

LEXQ=0

Returns the search variables for the "loud" lookup using the Kernel Toolkit's
Multi-Term Lookup Utility (MTLU) entry point ^XTLKKWL (Version 1.0).

NOTE: X must be preset to the user input prior to calling
CONFIG^LEXSET with LEXQ=0.

LEX

This variable indicates the current status of the dialog between the Lexicon and either the user or the calling application.

LEX > 0

The lookup is still engaged, the selection list stored at ^TMP("LEXHIT") still exists, and the lookup is waiting for a user response.

LEX = 0

The lookup has disengaged, the selection lists stored at ^TMP("LEXHIT") and ^TMP("LEXFND") have been deleted, and the lookup is waiting for a response from the application. There are only two conditions that can set LEX to 0. They are:

a)   The user has reviewed the entire selection list and not made a selection. If this is the case, the global array ^TMP("LEXSCH",$J) still exists. At this point, the Lexicon is waiting to receive either the user narrative (to be saved in the Unresolved Narratives file 757.06) or any other response to proceed with cleaning up the environment before disengaging the dialog with the application.

b)   The user has made a selection from the list. If this is the case, the local array LEX("SEL") is present. The Lexicon considers the dialog with the application over, and leaves the cleanup of the environment to the calling application (by killing LEX).

LEX does not exist

This condition occurs when:

a) The user's input to LOOK^LEXA is null or contains an up-arrow (^) ending the dialog between the application and the Lexicon.

b) The user's response while reviewing the list contains double up-arrows (^^) ending the dialog between the user and the Lexicon.

Global Arrays

Found Array

^TMP("
LEXFND")

This global array contains the list of expressions found during the search. This global array continually grows smaller as ^TMP("LEXHIT") grows larger.

Hit
Array

^TMP("
LEXHIT")

This global array contains the list of expressions found during the search. It is built by reordering the list in ^TMP("LEXFND") as the user reviews the list. The exact match (if any) at the top of the list, is immediately followed by other expressions found in the order of frequency of use. This array grows larger as the user reviews the list by adding entries to the list from ^TMP("LEXFND"). It is deleted when the Lexicon disengages the dialog with the user (the user either entered an up-arrow ^ or has reviewed the entire list and did not make a selection).

Search Conditions

^TMP("LEXSCH")

^TMP("LEXSCH",$J,<mnemonic>,0)

This global array contains all of the conditions under which the search was conducted. These conditions include:

ID	Search Condition	Version 1.0 Equivalent
APP	Calling application	LEXAP
DIS	Display	LEXSHOW
EXC	Exact Match Concept	
EXM	Exact Match	
FIL	Filter	DIC("S")
FLN	File number	
GBL	Global	DIC, XTLKGBL, XTLKKSCH("GBL")
IDX	Index to search on	XTLKKSCH("INDEX")
LEN	List length	
LOC	User's Hospital Location	
LST	Last entry reviewed	
NAR	User input narrative	X, XTLKX
NUM	Number of matches found	^TMP("XTLKHITS",$J)
OVR	Overwrite user defaults flag	
RES	Last user response	
SCH	Search string	
SCT	Shortcut preference	
SVC	User's Service	
TOL	Top of the List flag	
UNR	Unresolved Narrative flag	LEXUN
USR	User ID	DUZ
VDT	Code Set Version Date	
VOC	Subset (vocabulary)	LEXSUB

Local Arrays

There is only one local array, LEX. It contains the following segments:

LEX("ERR",#)	Errors
LEX("EXC")	Location of an Exact Match Major Concept
LEX("EXM")	Location of an Exact Match
LEX("HLP",#)	Help Text to Display
LEX("LIST",#)	Selection List to Display
LEX("NAR")	User Narrative
LEX("MAT")	Matches Found String
LEX("MAX")	The Maximum allowable Selection
LEX("MIN")	The minimum allowable Selection
LEX("RES")	Last Response from the User
LEX("UNR")	Unresolved Narrative flag
LEX("SEL",SEG,#)	The Results of a User Selection

Error Array   LEX("ERR")

If an error has occurred, LEX("ERR") contains the textual description of the error.

Exact Match   LEX("EXM")

This segment only exists if an exact match is found during the lookup. It provides the location where the exact match is stored. There are two forms of this segment:

1) The list still exists and the user is reviewing the entries on the list for selection:

        LEX("EXM")=<position on the list>^<term>

    In this case, the position on the list is set to 1 (exact matches are placed on the top of the selection list). A calling application could use the position on the list (the first piece) as a default value (formerly DIC("B")) when offering the user a choice.

        22 matches found
        1. Exact match
        2. Exact match Major Concept - see LEX("EXC") below
        3. Other match
        4. Yet another match
        5. ....

        Select 1-5: 1//

2) The list no longer exists because the user has either made a selection from the entries on the list or has reviewed all the entries on the list without making a selection:

        LEX("EXM")=<IEN>^<term>

In this case, the position on the list has been replaced with the internal entry number in the Lexicon Expression file (757.01) and remains available for further use (i.e., Unresolved Narratives).

Exact Match Concept   **LEX("EXC")**

This segment only exists if an exact match is found during the lookup (see EXM above) and the exact match is not a Major Concept (i.e., synonym or lexical variant to a Major Concept). It provides the location where the Major Concept of the exact match is stored. Like EXM, there are two forms of this segment, they are:

1) The list still exists and the user is reviewing the entries on the list for selection:

>   LEX("EXC")=<position on the list>^<term>

In this case, the position on the list is set to 2 (the Major Concept to an exact match is placed immediately after the exact match on the selection list).

>   Example: User searches the Lexicon for "CHF"
>
>   5 matches found
>
>   1. CHF (exact match, synonym to Major Concept)
>   2. Congestive Heart Failure (Major Concept of exact match)
>   3. Other match
>   4. Yet another match
>   5. ....
>
>   Select 1-5:   1//

2) The list no longer exists because the user has either made a selection from the entries on the list or has reviewed all the entries on the list without making a selection:

>   LEX("EXC")=<IEN>^<term>

Help Array   **LEX("HLP")**

Help text to be displayed (or term definition) when the user's response contains a "?"

List Array   **LEX("LIST")**

Contains only those entries that should be displayed to the user for selection. It differs from ^TMP("LEXFND") which contains all matches found and ^TMP("LEXHIT") which contains all entries reviewed by the user. It can be thought of as a single page of the selection list with a page length defined by the calling application at the time the search is initiated (the third input parameter of LOOK^LEXA). The default page length of the displayable list is 5, displaying 5 entries at a time until the user has reviewed all the entries on the list or made a selection from the list.

User Narrative   **LEX("NAR")**

This is the text string that the user inputs to the lookup. It only exists if the calling application uses the Unresolved Narrative function of the Lexicon.

Matches Found String   **LEX("MAT")**

This text string indicates the total number of entries found during the search, and it is only available during the initial review of the list and when the user is at the top of the list. Examples might be "1 match found" or "36 matches found" and could be used as:

    22 matches found

    1. Condition
    2. Condition without mention of complications
    3. Condition in late stages of development
    4. Condition ....
    5. Condition ....

    Select 1-5:

Maximum Selection   **LEX("MAX")**

This segment only exists if a selection from the list is possible. When it exists, it sets to the number of the last entry on the list that the user has reviewed, not the total number of entries found. The total number of entries found is stored at LEX. LEX is frequently greater that LEX("MAX") until the user has reached the end of the list, then they are the same. If the last entry on the list that a user has reviewed was 30, and the user "jumps" backwards on the list (jumps from entry 30 to entry 8), LEX("MAX") remains at 30.

We suggest that both LEX("MIN") and LEX("MAX") may be used to build a selection prompt (formerly DIC("A")) for the user. For example:

   "Select "_'LEX("MIN")_"-"_'LEX("MAX")_":"

Minimum Selection   **LEX("MIN")**

This segment only exists if a selection from the list is possible. When it exists, it should always be set to 1.

Response from the User   **LEX("RES")**

This segment contains the last response from the user. It only exists if the global array ^TMP("LEXSCH") exists.

Selection Array   **LEX("SEL")**

Returned information about the user's selection (formerly a non-negative Y in Version 1.0). The absence of this array segment at the conclusion of the user's review of the list implies that no selection was made or that the user up-arrowed out of the selection process (implied -Y). The calling application must extract from the array the information needed and delete the array. The following is an example of the SEL array:

```
LEX("SEL","EXP",0)=5
LEX("SEL","EXP",1)=22600^Sexual Abuse of Child
LEX("SEL","EXP",2)=22601^Child Molestation, Sexual
LEX("SEL","EXP",3)=22604^Abuses, Child Sexual
LEX("SEL","EXP",4)=22608^Child Sexual Abuses
LEX("SEL","EXP",5)=22610^Sexual Abuses, Child
LEX("SEL","EXP","B",22600,1)=
LEX("SEL","EXP","B",22601,2)=
LEX("SEL","EXP","B",22604,3)=
LEX("SEL","EXP","B",22608,4)=
LEX("SEL","EXP","B",22610,5)=
LEX("SEL","EXP","C","LEX",3)=
LEX("SEL","EXP","C","LEX",4)=
LEX("SEL","EXP","C","LEX",5)=
LEX("SEL","EXP","C","MAJ",1)=
LEX("SEL","EXP","C","SYN",2)=
LEX("SEL","SIG",0)=1
LEX("SEL","SIG",1)=Sexual maltreatment of the child or
minor.
LEX("SEL","SRC",0)=3
```

```
     LEX("SEL","SRC",1)=ICD-9-CM^995.5^22600
     LEX("SEL","SRC",2)=ICD-9-CM^V61.21^22600
     LEX("SEL","SRC",3)=DSM-IV^V61.21^22600
     LEX("SEL","SRC","B","DSM-IV",3)=
     LEX("SEL","SRC","B","ICD-9-CM",1)=
     LEX("SEL","SRC","B","ICD-9-CM",2)=
     LEX("SEL","SRC","C",995.5,1)=
     LEX("SEL","SRC","C","V61.21",2)=
     LEX("SEL","SRC","C","V61.21",3)=
     LEX("SEL","SRC","D",22600,1)=
     LEX("SEL","SRC","D",22600,2)=
     LEX("SEL","SRC","D",22600,3)=
     LEX("SEL","STY",0)=1
     LEX("SEL","STY",1)=Diseases/Pathologic Processes^Mental or
     Behavioral Dysfunction
     LEX("SEL","VAS",0)=11
     LEX("SEL","VAS",1)=80^11656;ICD9(^V61.21^22600
     LEX("SEL","VAS",2)=80^7571;ICD9(^995.5^22600
     LEX("SEL","VAS",3)=627.7^1055;YSD(627.7,^V61.21^22600
     LEX("SEL","VAS","B",80,1)=
     LEX("SEL","VAS","B",80,2)=
     LEX("SEL","VAS","B",627.7,3)=
     LEX("SEL","VAS","C",995.5,2)=
     LEX("SEL","VAS","C","V61.21",1)=
     LEX("SEL","VAS","C","V61.21",3)=
     LEX("SEL","VAS","D",22600,1)=
     LEX("SEL","VAS","D",22600,2)=
     LEX("SEL","VAS","D",22600,3)=
     LEX("SEL","VAS","V","1055;YSD(627.7,",3)=
     LEX("SEL","VAS","V","11656;ICD9(",1)=
     LEX("SEL","VAS","V","7571;ICD9(",2)=
```

The LEX("SEL") array is in 5 segments:

Expressions   **LEX("SEL","EXP")**

Contains the expressions selected by the user in the same format as Fileman's returned variable "Y." This portion of the array includes the Major Concept and all Synonyms and Lexical Variants. LEX("SEL","EXP",1) is always the expression selected by the user. This segment has two indexes:

   B   Internal Entry Point of the Expression file #757.01.
   C   Expression type; (MAJ)or concept, (SYN)onym, and (LEX)ical variants

Significance   **LEX("SEL","SIG")**

Contains the definition of the Major Concept, if one exists.

Sources   **LEX("SEL","SRC")**

Contains source codes for specified classification systems (i.e., ICD, CPT, DSM, etc.) for the expressions contained in LEX("SEL","EXP"). Each entry contains the classification system nomenclature, the classification code, and the internal entry number to the expression in file 757.01 to which it is mapped.

All classification codes returned in this segment are active codes based on the versioning date provided. If no date is provided, then all codes returned in this array are active as of TODAY (default).

This segment has three indexes:

   B   Classification System Nomenclature
   C   Classification Code
   D   Internal Entry Number to file 757.01

Semantics   **LEX("SEL","STY")**

Contains the Semantic Class and the Semantic Type of the Major Concept contained in LEX("SEL","EXP").

VA Sources   **LEX("SEL","VAS")**

If one or more of the sources in LEX("SEL","SRC") is found in one of the primary VA authoritative files, then this section contains the file number, variable pointer, the source code, and an internal entry number to the Lexicon. The primary VA authoritative files pointed to include file 80 (ICD Diagnosis), file 80.1 (ICD Procedures), file 81 (CPT), and file 627.7 (DSM-IV).

All classification codes returned in this segment are active codes based on the versioning date provided. If no date is provided, then all codes returned in this array are active as of TODAY (default).

This segment has four indexes:

        B   VA authoritative file number
        C   Classification Code
        D   Internal Entry Number to file 757.01
        V   Variable pointer to the authoritative file

Controlling the View

View by Semantic Class and Types

The Lexicon provides for filtering the search to view only those terms that semantically fit into a class and type, or a group of classes and types. We listed these classes and types in Appendix A of this document. The Lexicon uses a string of identifiers indicating the classes and types to either include or exclude in a search. This string is in two parts (delimited by a ";") of those classes and types to include in the search and those classes and types to exclude. The include portion of the string has precedence over the exclude. The insertion of a class into the string represents all of the types belonging to that class; consequently, it is not necessary to repeat all of the types with the class. The absence of a class/type in the include portion of the string automatically excludes it from the search. Semantic classes are represented by a 3-character mnemonic and semantic types are represented numerically (provided by NLM UMLS). For example:

The string: "BEH/DIS/44/45/49/167/4/5/7/PHY/PRO;50"
translates to:

INCLUDE:	EXCLUDE:	
Behaviors	Activities	Nucleic Acid
Diseases/Pathologic Process	Anatomy	Nucleoside or Nucleotide
Physiology	Chemicals and Drugs	Amino Acid, Peptide or Protein
Procedures	Concepts and Ideas	Gene Product
Fungus	Geographic Areas	Plant
Virus	Groups	Alga
Bacterium	Physical Objects	Rickettsia or Chlamydia
Molecular Functions	Occupations/Organizations	Animal
Genetic Functions	Macromolecular Structure	Invertebrate
Cell/Molecular Dysfunctions	Gene or Genome	Vertebrate
Substances	Molecular Function	Amphibian
	Genetic Function	Bird
	Research Technique	Fish
	Molecular Sequence	Reptile
	Nucleotide Sequence	Mammal
	Amino Acid Sequence	Human
	Carbohydrate Sequence	

View by Classification System

The Lexicon lets you filter the search to view only those terms linked to a specified classification system. These classification systems (provided by both the NLM and the VA) are represented by a 3 character mnemonic and are listed in Appendix B of this document. The Lexicon uses a string of mnemonic identifiers indicating the classification systems to include in a search. For example:

The string: "ICD/CPT/DS4"
translates to:

Include terms linked to:

ICD-9	International Classification of Diseases
CPT-4	Current Procedural Terminology
DMS-IV	Diagnostic and Statistical Manual of Mental Disorders

View by both Semantics and Classification Systems

This is a combination of the two previous views. In this scenario, if the search encounters a term which is to be excluded from the search by virtue of the semantics, but the term is found to be linked to one of the specified classification systems, then the term is included in the search, ignoring the instruction to exclude the term based on semantics. An example of this type of string would be:

"BEH/DIS/44/45/49/4/5/7/PHY/PRO;50;ICD/CPT"

View by Subset

This is not a filtered view in the sense of "including/excluding" terms from a selection list. A sub-set is a group of terms based on a common theme (e.g., specialty, function, etc.) which are indexed separately from the main word index in the Lexicon. This type of view has two distinct advantages over filtering: 1) it is significantly faster since it does not have the additional burden of deciding whether to include or exclude a term, and 2) it imposes a limit on the search, making it impossible to find a term not contained in the sub-set (e.g., "Diabetes Mellitus" could not be found within the Dental sub-set).

Other Views

The Lexicon is always open to new methods of changing the view to suit the client application using the existing structures and fields. New fields can be created to support new functionality; however, it should be done with great care and thought (an 8-character mandatory field adds 2 megabytes to the Lexicon). Generally, if the view can be described, then it can be created.

Searching the Lexicon: Building and Re-ordering the List

The Lexicon reorders the results of a search beginning with the exact match (if found) followed by other matches in descending order of frequency of use. The reordering of the search results occurs after the search has been completed and while the user is reviewing the matches found. In order to do this, the Lexicon must build three lists. These lists include:

Matches Found   ^TMP("LEXFND",$J)

This list is built while the search is in progress. Each time a match is found, that term is placed on this list in an order based on a term's frequency of use and Internal Entry Number (IEN) from the Expression file (#757.01). When the search is completed, this list contains all of the matches found.

As the user reviews the matches found, entries are taken off this list and placed on the review list ^TMP("LEXHIT) until the user either selects an entry, terminates the selection process by entering an up-arrow ("^"), or reaches the end of the list. As the user continues to review the matches found, this list continues to shrink until it no longer exists.

Matches Reviewed ^TMP("LEXHIT",$J)

The Lexicon begins to build this list only after the search has completed. This list is initially populated with the first few entries to be reviewed by the user (the exact number is determined by the third input parameter of LOOK^LEXA). Entries on this list are ordered sequentially from one to the total number of matches reviewed by the user.

As the user reviews the matches found, entries are added to this list from the list of matches found in ^TMP("LEXFND") until the user either selects an entry, terminates the selection process by entering an up-arrow ("^"), or reaches the end of the list. As the user continues to review the matches found, this list continues to grow until it contains all of the matches found.

Matches Displayed LEX("LIST")

This list contains only those entries to be displayed. The length of this list does not exceed the list length as specified by the calling application in the third input parameter of LOOK^LEXA. If the list length is not specified by the calling application, then the default list length is set to 5.

Example Search

The user searches the Lexicon with the following results:

Matches found	20
List Length (specified by the calling application)	5

Initially the list of matches found in ^TMP("LEXFND") would contain 20 entries. However, when the search is completed and the selection process begins, the first five entries are taken off the list of matches found in ^TMP("LEXFND") and placed on both the review list in

^TMP("LEXHIT") and the display list in LEX("LIST"). The calling application should display the contents of the display list LEX("LIST") for the user to review.

If the user does not select one of the first five entries on the display list in LEX("LIST") and presses <Return> to review the next five, then an additional five entries are taken from the list of matches found in ^TMP("LEXFND") and placed on the review list in ^TMP("LEXHIT") with only the current five entries being placed on the display list in LEX("LIST"). The calling application should again only display the five entries on the display list LEX("LIST").

As long as the user does not make a selection, and keeps pressing <Return>, entries are taken from the list of matches found in ^TMP("LEXFND") and placed on the review list in ^TMP("LEXHIT") with the current five entries on the display list in LEX("LIST"). Once the user gets to the end of the list, the list of matches found in ^TMP("LEXFND") is depleted, and the list of entries reviewed in ^TMP("LEXHIT") has 20 entries. The display list in LEX("LIST") always has the number of entries specified by the calling application (in this case, five).

If the user has reviewed some or all of the matches found and decides to jump backwards on the list, then the display list in LEX("LIST") is populated from the list of entries reviewed in ^TMP("LEXHIT").

Unresolved Narratives

It is possible for users and applications to provide feedback from the sites regarding the content of the Lexicon. This is done either by a user through a calling application (user unresolved narratives) or by the calling application (application unresolved narratives).

Which applications should use Unresolved Narratives? Chances are if the vocabulary which the targeted users are employing is subject to a myriad of synonyms and lexical variants (e.g. plurals, singular form, etc.), then the application should use the Unresolved Narrative functionality. Applications which would not want to use Unresolved Narratives are those which use an extremely controlled vocabulary where a single concept has only one acceptable form or if adding terminology would disrupt the content and purpose of the controlled vocabulary.

User Unresolved Narratives

There are three prerequisites the calling application must meet to use and return User Unresolved Narratives:

1) The calling application must be able to store the text within the calling application or store the text in an alternate file (i.e., the Provider Narrative file) and point to the text.

2) The calling application must be defined in the Subset Definition file (757.2).

3) The Unresolved Narrative flag in the Subset Definition file for the calling application must be set to 1.

There are two prerequisites the Lexicon must meet to save and return the User Unresolved Narrative:

1) The lookup must have completed with no selection made. This is determined by the absence of the following arrays:

> ^TMP("LEXFND",$J)
> ^TMP("LEXHIT",$J)
> LEX("LIST")
> LEX("SEL")

2) The Lexicon must have knowledge of the conditions under which the User Unresolved Narrative occurred. This is determined by the presence of the array:

^TMP("LEXSCH",$J)

When a User Unresolved Narrative occurs, and the conditions above are met, the calling application may store and return the User Unresolved Narrative by calling the entry point:

EN^LEXAR(<user unresolved narrative text>)

When this is done, the User Unresolved Narrative is temporarily stored in the Unresolved Narratives file (757.06). Periodically the Lexicon Utility packs the entries in this file into a mail message and sends them to G.LEXICON@ISC-SLC.VA.GOV for consideration for inclusion in the Lexicon. After the Lexicon Utility sends this message, it deletes the entries in this file.

The following information about the narrative and the conditions of the search is returned to the IRM Field Office:

Narrative	Mandatory	User input
Date-Time	Mandatory	When the search was conducted
Search String	Mandatory	Actual search string
Matches	Mandatory	Number of matches found
Application	Mandatory	Name of the calling application
Service	Optional	Service of the user
Location	Optional	Hospital Location of the user
File	Mandatory	Number of file searched
Index	Mandatory	Name of the index used
Shortcuts	Optional	Name of the Shortcut set used
Screen	Optional	Screen used (MUMPS code)

User Unresolved Narratives received at the IRM Field Office are reviewed and classified as:

1) A valid expression to be linked (e.g., synonym or lexical variant).

2) A valid expression to be added (no equivalent concept in the current version).

3) A valid expression in the current version containing a spelling error, acronym, or abbreviation not previously defined. Only the spelling error, acronym, or abbreviation is linked to the existing expression while the remainder of the expression is ignored.

4) A valid expression in the current version.

5) An invalid expression is ignored (e.g., "XXXX?").

If the User Unresolved Narrative is included in a future release of the Lexicon and exported to the site, it becomes the responsibility of the calling application to resolve the entry at the site. The Problem List application is the only exception at this time. When a new release of the Lexicon Utility is installed at a site, the Problem List is updated by a series of routines (LEXPL*) called by the Lexicon Utility's Post-Install.

Application Unresolved Narratives

The purpose of this type of unresolved narrative is to permit the calling application to return a comment about an existing term in the Lexicon. This occurs when an application detects a problem with an expression in the Expression file (757.01). The application can return the Internal Entry Number (IEN) of that expression along with a short comment stating the problem. These commented, unresolved narratives are also temporarily stored and periodically packed up into a mail message that is sent to G.LEXICON@ISC-SLC.VA.GOV. However, instead of considering these narratives for inclusion in the Lexicon (since they already exist), the problem stated in the comment field is reviewed and action is taken where appropriate.

There are no prerequisites for the calling application; however, the lookup for the Lexicon must not be engaged (determined by the absence of all Lexicon variables and arrays).

The following information about the expression is returned to the IRM Field Office:

Narrative	Mandatory	User input
Expression	Mandatory	Pointer to file 757.01
Comment	Mandatory	Brief description of the problem

When an Application Unresolved Narrative occurs, the calling application may store and return the Application Unresolved Narrative by calling the entry point:

EN^LEXAR(<IEN^Comment>)

An application comment is in the general format IEN^COMMENT, where IEN is a pointer to an expression in the Expression file (757.01) and the COMMENT is a text string comment about the expression.

Examples of application comments might be:

IEN^Diagnostic term maps to 799.9

This type of comment might be used by an application which requires a valid ICD with a diagnostic term (as is the case with Problem List). If the Lexicon returns the term without an ICD or with "ICD code not found" in the ICD-9 file (80), then the application could take advantage of this entry point to instruct the developers of the Lexicon to have Medical Records Technicians look at, evaluate, and match the term to an appropriate ICD code for future iterations of the Lexicon.

IEN^RBBB suggested shortcut for Right bundle branch block

This type of comment might be used when the user input "RBBB" fails to return a selection list, and on a subsequent search the user entered "bundle branch block" and selected "Right bundle branch block," implying that RBBB was intended to have found "Right bundle branch block."

Re-indexing the Lexicon

For the purpose of re-indexing, the Lexicon can be divided into two types of files: Those which can be re-indexed independently and those which are re-indexed conditionally. If there is a need to re-index the Lexicon, the files should be re-indexed as follows.

These files may be independently re-indexed.

757	Major Concept Map
757.011	Expression Type
757.014	Expression Form
757.03	Coding Systems
757.04	Excluded Words
757.06	Unresolved Narratives
757.11	Semantic Classes
757.12	Semantic Types
757.2	Sub-Set Definitions
757.3	Lookup Screens
757.4	Shortcuts
757.41	Shortcut Context

These files have conditions placed on the re-indexing.

757.01   Expressions

Immediately after re-indexing this file, re-index the Replacement Word file #757.05 (also see 757.05 listed below).

757.02   Codes

Re-index the Coding Systems file #757.03 first.

757.05   Replacement Words

Re-indexing of this file depends on indexes in the Expressions file #757.01. If the indexes in file #757.01 are intact and current, then proceed with re-indexing of the Replacement Word file; otherwise, re-index file #757.01 first.

757.1   Semantic Map

Re-index both the Semantic Class file #757.11 and the Semantic Type file #757.12 first.

757.21   Sub-Sets

Re-indexing of this file depends on indexes in the Sub-Set Definition file #757.2. If the indexes in file #757.2 are intact and current, then proceed with re-indexing of the Sub-Sets file; otherwise, re-index file #757.2 first.

Database Integration Agreements

Lexicon Utility V. 2.0 as the Custodian

Supported References

1571   NAME: LEXICON UTILITY EXPRESSIONS
CUSTODIAL PACKAGE: LEXICON UTILITY Salt Lake City
SUBSCRIBING PACKAGE:

USAGE:	Supported	APPROVED:	APPROVED
STATUS:	Active	EXPIRES:	
DURATION:	Till Otherwise Agr	VERSION:	
FILE:	757.01	ROOT:	LEX(757.01,
DESCRIPTION:		TYPE:	File

The Lexicon Utility (Version 2.0 and greater) maintains static internal entry numbers (IENs) for the Expression file (#757.01). As a result, this file may be pointed to retrieve the Display Text (.01) for both current Expressions and deactivated Expressions (Deactivation Flag 757.01;9 1;5 set to 1). This agreement is a follow-on to DBIA 457 (Version 1.0) and is re-issued to include the package name, namespace, and global root changes occurring in Version 2.0. This is not an amendment to 457.

	Version 1.0	Version 2.0
Package name	Clinical Lexicon Utility	Lexicon Utility
Namespace	GMPT	LEX
Expression File Root	^GMP(757.01,	^LEX(757.01,

1573   NAME: LEXU
CUSTODIAL PACKAGE: LEXICON UTILITY Salt Lake City
SUBSCRIBING PACKAGE:

USAGE:	Supported	APPROVED:	APPROVED
STATUS:	Active	EXPIRES:	
DURATION:	Till Otherwise Agr	VERSION:	
DESCRIPTION:		TYPE:	Routine

LEXU is a utility routine for the Lexicon Utility which contains functions useful in retrieving classification code(s) for a term. This agreement is a follow-on to DBIA 10148 (Version 1.0) and is re-issued to include the package name, namespace, routine name, and global root changes occurring in Version 2.0. This is not an amendment to 10148.

ROUTINE: LEXU

COMPONENT: $$ICDONE(IEN,DATE)

VARIABLES: IEN   Input
Internal Entry Number in the Expression file ^LEX(757.01).
Returns either a single ICD-9 code linked to the Lexicon
expression or Null if no ICD-9 code is found.

VARIABLES: DATE   Input
This is a date in Fileman format used to check if a code is
active or inactive on a specified date. If not supplied, it will
default to TODAY.

COMPONENT: $$ICD(IEN,DATE)

VARIABLES: IEN   Input
Internal Entry Number in the Expression file ^LEX(757.01).
Returns either a string of ICD-9 codes linked to an
expression (separated by semicolons, i.e., ICD;ICD;ICD) or
Null if no ICD-9 codes are found.

VARIABLES: DATE   Input
This is a date in Fileman format used to check if a code is
active or inactive on a specified date. If not supplied, it will
default to TODAY.

COMPONENT: $$CPTONE(IEN,DATE)

VARIABLES: IEN   Input
Internal Entry Number in the Expression file ^LEX(757.01).
Returns either a single CPT-4 code linked to the Lexicon
expression or Null if no CPT-4 code is found.

VARIABLES: DATE   Input
This is a date in Fileman format used to check if a code is
active or inactive on a specified date. If not supplied, it will
default to TODAY.

COMPONENT: $$DSMONE(IEN)

VARIABLES: IEN   Input
Internal Entry Number in the Expression file ^LEX(757.01).
Returns either a single DSM-IV code linked to the Lexicon
expression or Null if no DSM-IV code is found.

COMPONENT: $$CPCONE(IEN,DATE)

Returns either a single active HCPCS code linked to the
Lexicon expression or Null if no HCPCS codes exist.
HCPCS stands for Healthcare Financing Administration
(HCFA) Common Procedure Coding System.

| VARIABLES: | IEN | Input |

Internal Entry Number in the Expression file ^LEX(757.01).

| VARIABLES: | DATE | Input |

This is a date in Fileman format used to check if a code is active or inactive on a specified date. If not supplied, it will default to TODAY.

1597   NAME: LEXICON EXPRESSION INFORMATION
CUSTODIAL PACKAGE: LEXICON UTILITY Salt Lake City
SUBSCRIBING PACKAGE:

USAGE:	Supported	APPROVED:
STATUS:	Active	EXPIRES:
DURATION:	Till Otherwise Agr	VERSION:
DESCRIPTION:		TYPE: Routine

LEXA is used by the Lexicon Utility to perform a silent lookup and return an array of information about the expression found.

| ROUTINE: | LEXA |

| COMPONENT: | INFO(IEN,DATE) |

This entry point allows applications to retrieve information about an expression without conducting a search.

| VARIABLES: | IEN | Input |

Internal Entry Number in the Expression file ^LEX(757.01).

| VARIABLES: | DATE | Input |

This is a date in Fileman format used to check if a code is active or inactive on a specified date. If not supplied, it will default to TODAY.

| VARIABLES: | LEX | Output |

The local array LEX("SEL") contains the major concept, synonyms, lexical variants, associated codes (i.e., ICD, CPT, DSM, etc.), the expression definition (if one exists), the semantic class, the semantic type, and all VA classification sources. See the Lexicon Utility's Technical Manual for a detailed description of this array.

1609   NAME: LEXICON SETUP SEARCH PARAMETERS
CUSTODIAL PACKAGE: LEXICON UTILITY Salt Lake City
SUBSCRIBING PACKAGE:
USAGE: Supported   APPROVED:
STATUS: Active   EXPIRES:
DURATION: Till Otherwise Agr   VERSION:
DESCRIPTION: TYPE: Routine

The Lexicon Utility uses LEXSET to set up search parameters based on applications definitions, subset definitions, and user defaults stored in the Subsets Definition file (#757.2). These search parameters are stored in the global array ^TMP("LEXSCH",$J).

ROUTINE: LEXSET

COMPONENT: CONFIG(LEXNS,LEXSS,DATE)

                 This entry point may be used by other applications to set up parameters for conducting a search of the Lexicon Utility.

VARIABLES: LEXNS   Input

                 LEXNS is an application identifier (formerly namespace) which tells the setup routines which application definition in file 757.2 to use to retrieve application defaults (i.e., global, display, filter, etc.). Acceptable values for LEXNS are found in file 757.2 at the "AN" index - ^LEXT(757.2,"AN",LEXNS).

VARIABLES: LEXSS   Input

                 LEXSS is a subset identifier which tells the setup routines which subset definition in file 757.2 to use to retrieve subset and user defaults (i.e., global, display, filter, etc.). Acceptable values for LEXSS may be found in file 757.2 at either the "AA" or the "AB" indexes - ^LEXT(757.2,"AA",LEXSS) or ^LEXT(757.2,"AB",LEXSS).

VARIABLES: DATE   Input

                 This is a date in Fileman format used to check classification codes to determine if they are active or inactive on the specified date. If not supplied, it will default to TODAY.

VARIABLES: ^TMP("LEXSCH",$J)   Output

^TMP("LEXSCH",$J) is a global array used by the Lexicon Utility to control how a search of the Lexicon is to be conducted. It contains the following segments:

APP	Application (from LEXNS)
DIS	Display format
FIL	Filter
FLN	File Number
GBL	Global (Fileman DIC)
IDX	Index used during the search
LEN	Length of list to display
LOC	Hospital Location
OVR	Overwrite User Defaults flag
SCT	Shortcuts
SVC	Service
UNR	Unresolved Narrative flag
USR	User (DUZ)
VDT	Version Date Check (for classification codes)
VOC	Vocabulary

A detailed description of this global array may be found in the Lexicon Utility's Technical Manual.

1614   NAME: LEXICON EXPRESSIONS FROM CODES
CUSTODIAL PACKAGE: LEXICON UTILITY Salt Lake City
SUBSCRIBING PACKAGE:

USAGE:	Supported	APPROVED:	
STATUS:	Active	EXPIRES:	
DURATION:	Till Otherwise Agr	VERSION:	
DESCRIPTION:		TYPE:	Routine

The Lexicon Utility uses the LEXCODE routine to extract expressions (terms) in the form of Fileman's output variable "Y" based on a classification code.

ROUTINE: LEXCODE

COMPONENT: EN(LEXSO,DATE)

This entry point builds a local array containing expressions linked to a classification code.

VARIABLES: LEXSO   Input

LEXSO is a classification code from one of several sources (i.e., ICD, CPT, DSM). A complete list of these sources can be found in the Lexicon Utility's Technical Manual.

VARIABLES: DATE   Input

This is a date in Fileman format used to check if a code is active or inactive on a specified date. If not supplied, it will default to TODAY.

VARIABLES: LEXS(SAB,#)   Output

LEXS(SAB,#)=IEN^TERM is a local array containing references to expressions linked to the classification code. SAB refers to the three-character source abbreviation of the classification system (i.e., ICD-9-CM = ICD). A description of this array and a list of the source abbreviations can be found in the Lexicon Utility's Technical Manual.

4083   NAME: LEXICON CODE STATUS
CUSTODIAL PACKAGE: LEXICON UTILITY Dallas
SUBSCRIBING PACKAGE:
USAGE: Supported   ENTERED: APR 14,2003
STATUS: Active   EXPIRES:
DURATION: Till Otherwise Agr VERSION:
DESCRIPTION: TYPE: Routine

ROUTINE: LEXSRC2
COMPONENT: $$STATCHK(CODE,DATE)

This entry point is used to check the activation status of a code in the Lexicon Utility.

This function returns the following outputs:

1 ^ IEN   Code is Active, and stored at ^LEX(757.02,IEN,0)
0 ^ IEN   Code is Inactive, and stored at ^LEX(757.02,IEN,0)
0 ^ -1   Code is Inactive, and not found in the Lexicon

VARIABLES: CODE   Input

This is a code taken from a classification system contained in the Lexicon (i.e., ICD, CPT, etc.)

VARIABLES: DATE   Input

This is the date used to determine if a code was either active or inactive on a specific date. If not supplied, TODAY will be used as the date.

Private Agreements

1599   NAME: LEXICON USER DEFAULTS - FILTER
CUSTODIAL PACKAGE: LEXICON UTILITY   Salt Lake City
SUBSCRIBING PACKAGE: PROBLEM LIST   Salt Lake City
USAGE: Private   APPROVED: APPROVED
STATUS: Active   EXPIRES:
DURATION: Till Otherwise Agr   VERSION:
DESCRIPTION: TYPE: Routine

The entry point EN1^LEXDFL is used to set up a user default filter for
conducting searches in the Lexicon Utility. This entry point, along with
EN1^LEXDCC, EN1^LEXDVO, EN1^LEXDCX, and EN1^LEXDDS replaces
^GMPTDUSR used in Version 1.0 of the Clinical Lexicon (see DBIA 339).

   ROUTINE: LEXDFL

   COMPONENT: EN1(LEXAP)

                    This entry point allows a single user to edit the default
                    lookup filter for the Lexicon Utility.

   VARIABLES: LEXAP   Input

                    LEXAP is the Internal Entry Number of the Subset
                    Definition file (#757.2) where the application definition is
                    located.

1601   NAME: LEXICON USER DEFAULTS - DISPLAY
CUSTODIAL PACKAGE: LEXICON UTILITY Salt Lake City
SUBSCRIBING PACKAGE: PROBLEM LIST Salt Lake City
USAGE: Private   APPROVED:
STATUS: Active   EXPIRES:
DURATION: Till Otherwise Agr   VERSION:
DESCRIPTION: TYPE: Routine

The entry point EN1^LEXDCC(LEXAP) is used to set up a user default display
(classification codes) for conducting searches in the Lexicon Utility. This entry
point along with EN1^LEXDFL, EN1^LEXDVO, EN1^LEXDCX, and
EN1^LEXDDS replaces ^GMPTDUSR used in Version 1.0 of the Clinical
Lexicon Utility (see DBIA 339).

   ROUTINE: LEXDCC

   COMPONENT: EN1(LEXAP)

                    This entry point allows a single user to edit the default
                    lookup display for the Lexicon Utility.

VARIABLES: LEXAP   Input

LEXAP is the Internal Entry Number of the Subset Definition file (#757.2) where the application definition is located.

1603   NAME: LEXICON USER DEFAULTS - VOCABULARY
CUSTODIAL PACKAGE: LEXICON UTILITY Salt Lake City
SUBSCRIBING PACKAGE: PROBLEM LIST Salt Lake City

USAGE:	Private	APPROVED:	
STATUS:	Active	EXPIRES:	
DURATION:	Till Otherwise Agr	VERSION:	
DESCRIPTION:		TYPE:	Routine

The entry point EN1^LEXDVO is used to set up user default vocabulary for conducting searches in the Lexicon Utility. This entry point, along with EN1^LEXDFL, EN1^LEXDCC, EN1^LEXDCX, and EN1^LEXDDS replaces ^GMPTDUSR used in Version 1.0 of the Clinical Lexicon Utility (see DBIA 339).

ROUTINE: LEXDVO

COMPONENT: EN1(LEXAP)

This entry point allows a single user to edit the default lookup vocabulary for the Lexicon Utility.

VARIABLES: LEXAP   Input

LEXAP is the Internal Entry Number of the Subset Definition file (#757.2) where the application definition is located.

1605 NAME: LEXICON USER DEFAULTS - SHORTCUTS
CUSTODIAL PACKAGE: LEXICON UTILITY Salt Lake City
SUBSCRIBING PACKAGE: PROBLEM LIST Salt Lake City
USAGE: Private   APPROVED:
STATUS: Active   EXPIRES:
DURATION: Till Otherwise Agr   VERSION:
DESCRIPTION: TYPE: Routine

The entry point EN1^LEXDCX is used to set up user default shortcuts by context
for conducting searches in the Lexicon Utility. This entry point along with
EN1^LEXDFL, EN1^LEXDCC, EN1^LEXDVO, and EN1^LEXDDS replaces
^GMPTDUSR used in Version 1.0 of the Clinical Lexicon Utility (see DBIA
339).

ROUTINE: LEXDCX

COMPONENT: EN1(LEXAP)

                  This entry point allows a single user to edit the default
                  lookup shortcuts for the Lexicon Utility.

VARIABLES: LEXAP   Input

                  LEXAP is the Internal Entry Number of the Subset
                  Definition file (#757.2) where the application definition is
                  located.

1607   NAME: LEXICON USER DEFAULTS - LIST
CUSTODIAL PACKAGE: LEXICON UTILITY Salt Lake City
SUBSCRIBING PACKAGE: PROBLEM LIST Salt Lake City
USAGE: Private   APPROVED:
STATUS: Active   EXPIRES:
DURATION: Till Otherwise Agr   VERSION:
DESCRIPTION: TYPE: Routine

The entry point EN1^LEXDDS is used to list user defaults for searching the
Lexicon to a device (terminal or printer). This entry point along with
EN1^LEXDFL, EN1^LEXDCC, EN1^LEXDVO, and EN1^LEXDCX replaces
^GMPTDUSR used in Version 1.0 of the Clinical Lexicon Utility (see DBIA
339).

    ROUTINE: LEXDDS

    COMPONENT: EN1(LEXAP)

                This entry point allows a single user to list the Lexicon
                Utility defaults to a device (terminal or printer).

    VARIABLES: LEXAP   Input

                LEXAP is the Internal Entry Number of the Subset
                Definition file (#757.2) where the application definition is
                located.

Lexicon Utility V. 2.0 as the Subscriber

1611 NAME: PROBLEM FILE UPDATE BY LEXICON
     CUSTODIAL PACKAGE: PROBLEM LIST Salt Lake City
     SUBSCRIBING PACKAGE: LEXICON UTILITY Salt Lake City

USAGE:	Private	APPROVED:	
STATUS:	Active	EXPIRES:	
DURATION:	Till Otherwise Agr	VERSION:	
FILE:	9000011	ROOT:	AUPNPROB(
DESCRIPTION:		TYPE:	File

This gives the Lexicon Utility the ability to update the ICD codes and the Lexicon pointer (Problem) in the Problem List application with each new release of the Lexicon.

GLOBAL REFERENCE: ^AUPNPROB(D0,0)

.01   DIAGNOSIS   0;1 Both R/W w/Fileman
       Pointer to ICD-9 file #80.

GLOBAL REFERENCE: ^AUPNPROB(D0,1)

1.01   PROBLEM   1;1 Both R/W w/Fileman
       Pointer to Expressions file #757.01.

DBIAs To Be Discontinued

By Next Version: Release/Install of Lexicon Utility V. 2.0

457   NAME: CLINICAL LEXICON EXPRESSIONS
CUSTODIAL PACKAGE: CLINICAL LEXICON U   Salt Lake City
SUBSCRIBING PACKAGE:

USAGE:	Supported	APPROVED:	APPROVED
STATUS:	Active	EXPIRES:	
DURATION:	Next Version	VERSION:	1.0
FILE:	757.01	ROOT:	GMP(757.01,
DESCRIPTION:		TYPE:	File

The Clinical Lexicon Utility maintains static internal entry numbers (IENs) for
the Expression file (#757.01). As a result, this file may be pointed to to retrieve
the Display Text (.01) for both current Expressions and formerly used (deleted)
Expressions.

GLOBAL REFERENCE: ^GMP(757.01,D0,0)

.01   DISPLAY TEXT   0;1   Direct Global Read

The Display Text contained in the Clinical Lexicon is the
text that is used in all display/print routines.

By Patch: GMP*2.0*7 accompanying Lexicon Utility V. 2.0

339   NAME: DBIA339
CUSTODIAL PACKAGE: CLINICAL LEXICON U   Salt Lake City
SUBSCRIBING PACKAGE: PROBLEM LIST   Salt Lake City

USAGE:	Private	APPROVED:	APPROVED
STATUS:	Active	EXPIRES:	
DURATION:	Till Otherwise Agreed	VERSION:	
DESCRIPTION:		TYPE:	Routine

The Problem List Application has permission to use the entry point
^GMPTDUSR. This entry point is used to set up user-specific lookup defaults.

ROUTINE: GMPTDUSR

COMPONENT: GMPTDUSR

VARIABLES: GMPTAP   Input
                    Where GMPTAP = Application Namespace ('GMPL')

340   NAME: DBIA340
CUSTODIAL PACKAGE: CLINICAL LEXICON U   Salt Lake City
SUBSCRIBING PACKAGE: PROBLEM LIST   Salt Lake City
USAGE: Private   APPROVED: APPROVED
STATUS: Active   EXPIRES:
DURATION: Till Otherwise Agr   VERSION:
DESCRIPTION: TYPE: Routine

ROUTINE: GMPTSET

COMPONENT: CONFIG(GMPTNS,GMPTSS)

VARIABLES: GMPTNS   Input

                  Application Namespace ('GMPL')

                  GMPTSS   Input

                  Any valid subset mnemonic indexed at either
                  ^GMP(757.2,"AA"or ^GMP(757.2,"AB"

                  GMPTSHOW   Output

                  Display, when not defined by the user

                  DIC('S')   Output

                  Filter, when not defined by the user.

                  GMPTSUB   Output

                  Vocabulary, when not defined by the user.

                  GMPTUN   Output

                  Unresolved Narratives flag

By Inter-Package Agreement upon install of Lexicon Utility V. 2.0

1578   NAME: CLINICAL LEXICON UTILITY
CUSTODIAL PACKAGE: CLINICAL LEXICON U   Salt Lake City
SUBSCRIBING PACKAGE: AUTOMATED INFO COL   Washington
USAGE: Controlled Subscrip   APPROVED:
STATUS: EXPIRES:
DURATION: Till Otherwise Agreed   VERSION:
DESCRIPTION: TYPE: Routine

AICS would like to request access to call linetag CONFIG^GMPTSET until the
new version of the Clinical Lexicon Utility is released. At that point, we
reference routine ^LEXSET.

ROUTINE: GMPTSET

COMPONENT: CONFIG

VARIABLES: GMPL   Input

PL1   Input

1511   NAME: USE OF ICDONE
                CUSTODIAL PACKAGE: CLINICAL LEXICON U   Salt Lake City
                SUBSCRIBING PACKAGE: AUTOMATED INFO COL   Albany
                USAGE: Private   APPROVED: APPROVED
                STATUS: Active   EXPIRES:
                DURATION: Till Otherwise Agreed   VERSION:
                DESCRIPTION: TYPE: Routine

The Automated Information Collection System has the ability to print lists of
terms based on the Clinical Lexicon on Encounter Forms. When the forms are
scanned and data is passed to the PCE, the ICD9 diagnosis code associated with
the term is required to populate the Purpose of Visit. This agreement is to allow
AICS to use the call ICDONE^GMPTU (and its successor) ICDONE^LEXU to
determine the correct, or best, ICD9 Diagnosis code associated with the selected
term. Input variable is the pointer to the clinical lexicon entry in file 757.01.
Output is the ICD9 code, or null if none is found. This will be coded in such a
way that, when Clinical Lexicon converts to the LEX namespace, no changes
will be required.

        ROUTINE: GMPTU

        COMPONENT: ICDONE

        VARIABLES: INPUT   Input

                        The input to this function is the pointer to the Clinical
                        Lexicon file (757.01) as the only parameter. This value is
                        retrieved for other calls to the clinical lexicon.

                        OUTPUT   Output

                        The function returns the ICD9 Diagnosis most appropriate
                        for the term, or null if none exists. Returns the best ICD9
                        code to associate with a clinical lexicon entry.

By Time: 18 months after release of Lexicon Utility V. 2.0

10148   NAME: GMPTU
              CUSTODIAL PACKAGE: CLINICAL LEXICON U   Salt Lake City
              SUBSCRIBING PACKAGE:
              USAGE: Supported   APPROVED: APPROVED
              STATUS: Active   EXPIRES:
              DURATION: VERSION:
              DESCRIPTION: TYPE: Routine

              ROUTINE: GMPTU

              COMPONENT: $$ICDONE(IEN)

              VARIABLES: IEN   Input

                              Internal Entry Number of an expression (term) contained in
                              the Expressions File (#757.01). Returns: Either 1) the first
                              ICD code linked to the expression or 2) Null (if there are no
                              ICD codes linked to the expression).

              COMPONENT: $$ICD(IEN)

              VARIABLES: IEN   Input

                              Internal Entry Number of an expression contained in the
                              Expression file (#757.01). Returns: Either 1) a string of all
                              ICD codes linked to the expression (separated by
                              semicolons, i.e., ICD;ICD;ICD) or 2) Null (if there are no
                              ICD codes linked to the expression).

Package Security

Package Security for the Lexicon Utility is maintained through option assignments and VA Fileman Security Codes. We recommend that options and menus be assigned as shown below.

Options recommended for all users:

Option Name	Menu	Routine
Lexicon Utility	LEX UTILITY	Menu
Lookup Term	LEX LOOK-UP	LEXLK
User Defaults	LEX USER DEFAULTS	Menu
Filter	LEX USER FILTER	EN^LEXDFL
Display	LEX USER DISPLAY	EN^LEXDCC
Vocabulary	LEX USER VOCABULARY	EN^LEXDVO
Shortcuts	LEX USER SHORTCUTS	EN^LEXDCX
List Defaults	LEX USER DEFAULT LIST	EN^LEXDDS

Options recommended for managers only:

Option Name	Menu	Routine
Lexicon Management Menu	LEX MGT MENU	Menu
Defaults	LEX MGR DEFAULTS	Menu
Edit User/User Group Defaults	LEX MGR USER DEFAULTS	LEXDMG
List User/User Group Defaults	LEX MGR LIST DEFAULTS	LEXDD1
Edit Lexicon	LEX MGR EDIT LEXICON	Menu
Edit Term Definition	LEX MGR EDIT DEFN	LEXEDF1
Edit Shortcuts by Context	LEX MGR EDIT SHORTCUTS	LEXSC

Use of data by Salt Lake City IRM Field Office developers:

Unresolved Narratives:

In order to expand the Lexicon Utility's terms, synonyms, abbreviations, etc., the Salt Lake City IRM Field Office developers have created a program which captures and stores user-entered terminology that doesn't match existing Lexicon terminology.

When users conduct searches in the Lexicon Utility and a match is not found, the text that is entered is saved into the Unresolved Narratives file (#757.06). When the file contains 50 entries, a mail message is generated to transmit the contents of this file to the developers and then entries are purged from the file. This terminology is considered for inclusion in future releases of the Lexicon Utility.

Term Definitions:

When a site edits the content of the Definition field in the Expression file (#757.01), the changes are recorded and a mail message is generated sending the changes to the Salt Lake City IRM Field Office developers. The changes are considered for updating the Lexicon Utility.

VA Fileman Security Codes:

All files are exported with the following security codes:

Action	Security Code
DD	@
Delete	@
Read	@
LAYGO	@
Write	@

Appendix A: Classification Systems

ID	Nomen-clature	Name	Total Codes	Total Unique
ICD	ICD-9-CM	International Classification of Diseases, Diagnosis	19183	12517
ICP	ICD Proc	International Classification of Diseases, Procedures	1001	638
CPT	CPT-4	Current Procedural Terminology	7338	7338
CPC	HCPCS	Current Procedural Codes		
DS3	DSM-IIIR	Diagnostic & Statistical Manual of Mental Disorders	265	191
DS4	DSM-IV	Diagnostic & Statistical Manual of Mental Disorders	404	269
SNM	SNOMED 2	Systematized Nomenclature of Medicine	11113	6818
NAN	NANDA	Classification of Nursing Diagnosis	102	94
NIC	NIC	Nursing Intervention Classifications	341	336
NOC	NOC	Nursing Outcomes Classifications		
HHC	HHCC	Home Health Care Component Classifications		
OMA	Omaha	Omaha Nursing Diagnosis and Interventions	78	76
SCC	SCC	Service Connected Disabilities		
ACR	ACR	Index for Radiological Diagnosis	119	118
AIR	AI/Rheum	Disease/Findings Knowledge Base	757	753
COS	COSTAR	Computer Stored Ambulatory records Terminology	1397	1392
CST	COSTART	Coding Symbols Thes. for Adverse Reaction Terms	1675	1124
CSP	CRISP	Computer Retrieval of Info. on Scientific Projects	5123	4588
DXP	DxPlain	Diagnostic Prompting System	488	487
MCM	McMaster	Glossary of Epidemiology Terms	22	18
UMD	UMDNS	Universal Medical Device Nomenclature System	78	78
UWA	UWA	Glossary of Neuronames	586	586
MSH	MeSH	Medical Subject Headings		
LCH	Congress	Subject Headings		
DOR	Dorland	Dorland's Medical Dictionary		
UND	Undef	Undefined Code/Coding System (Code = "None")		

This page intentionally left blank.

Appendix B: Semantic Classes and Types

   1.   **Activities**   **ACT**

Event   51
A broad type for grouping activities, processes, and states. The children of this type are 'Activity,' and 'Phenomenon or Process.'

Activity   52
An operation or series of operations that an organism or machine carries out or participates in. The children of this type are 'Behavior,' 'Daily or Recreational Activity,' 'Occupational Activity,' and 'Machine Activity.' Examples include "Development Planning," "Expeditions," "Information Distribution," "Migration," and "Voting."

Daily or Recreational Activity   56
An activity carried out for recreation or exercise. Examples include "Swimming," "Camping," "Child Care," and "Exercise."

Occupational Activity   57
An activity carried out as part of an occupation or job. The children of this type are 'Health Care Activity,' 'Research Activity,' 'Governmental or Regulatory Activity,' and 'Educational Activity.' Examples include "Financial Management," "Collective Bargaining," "Commerce," and "Book Classification."

Health Care Activity   58
An activity of or relating to the practice of medicine or involving the care of patients. The children of this type are 'Diagnostic Procedure,' 'Laboratory Procedure,' and 'Therapeutic or Preventive Procedure.' Examples include "Preventive Health Services," "Ambulatory Care," "Clinic Activities," and "Geriatric Nursing."

Research Activity   62
An activity carried out as part of research or experimentation. This type has one child in the network, 'Molecular Biology Research Technique.' Examples include "Study Design," "Animal Experimentation," "Biomedical Research," and "Cluster Analysis."

Governmental or Regulatory Activity   64
An activity carried out by officially constituted governments, or an activity related to the creation or enforcement of the rules or regulations governing some field of endeavor. Examples include "Facility Regulation and Control," "Public Assistance," "Credentialing," and "Certification."

Educational Activity   65
An activity related to the organization and provision of education. Examples include "Community Health Education," "Preceptorship," "Academic Training," and "Family Planning Training."

Machine Activity   66
An activity carried out primarily or exclusively by machines. Examples include "Air Conditioning," "Equipment Failure," "Natural Language Processing," "Computer Simulation," and "Word Processing."

Phenomenon or Process **67**

A process or state which occurs naturally or as a result of an activity. The children of this type are 'Human-caused Phenomenon or Process,' 'Natural Phenomenon or Process,' and 'Injury or Poisoning.' Examples include "Disasters," "Famine," and "Noise."

Human-caused Phenomenon or Process **68**

A phenomenon or process that is a result of the activities of human beings. If the term refers to the activity itself, rather than the result of that activity, a type from the 'Activity' hierarchy is assigned instead. This type has one child in the network, 'Environmental Effect of Humans.' Examples include "Social Change," "Baby Boom," and "International Cooperation."

Environmental Effect of Humans **69**

A change in the natural environment that is a result of the activities of human beings. Examples include "Water Pollution," "Acid Rain," "Soil Degradation," and "Smog."

Natural Phenomenon or Process **70**

A phenomenon or process that occurs irrespective of the activities of human beings. This type has one child in the network, 'Biologic Function.' Examples include "Lightning," "Air Movements," "Sunlight," "Biological Phenomena," and "Corrosion."

2. **Anatomy** **ANT**

Anatomical Structure **17**

A normal or pathological part of the anatomy or structural organization of an organism. If the term refers to a structure found only in non-humans, the Non-Human flag is assigned as well. Examples of this would be such terms as "Feathers," "Gills," and "Horns." The children of this type are 'Embryonic Structure,' 'Congenital Abnormality,' 'Acquired Abnormality,' and 'Fully Formed Anatomical Structure.'

Embryonic Structure **18**

An anatomical structure that exists only before the organism is fully formed; in mammals, for example, a structure that exists only prior to the birth of the organism. This structure may be normal or abnormal. Examples include "Neural Crest," "Blastoderm," and "Fetal Heart."

Congenital Abnormality **19**

An abnormal structure, or one that is abnormal in size or location, present at birth or evolving over time as a result of a defect in embryogenesis. Examples include "Congenital cranial meningocele" and "Syndactylia."

Acquired Abnormality **20**

An abnormal structure, or one that is abnormal in size or location, found in or deriving from a previously normal structure. Examples include "Hernia," "Fistula," "Hemorrhoids," and "Varicose Veins."

Fully Formed Anatomical Structure   **21**
An anatomical structure in a fully formed organism; in mammals, for example, a structure in the body after the birth of the organism. The children of this type in the network are 'Body Part, Organ, or Organ Component,' 'Tissue,' 'Cell,' 'Cell Component,' and 'Macromolecular Structure.' They are linked to each other by the part_of relationship in the network. Thus, a Macromolecular Structure is part of a Cell Component, which is part of a Cell, etc. A term is assigned to the most specific type available.

Body System   **22**
A complex of anatomical structures that performs a common function. Examples include "Renin-Angiotensin System," "Limbic System," "Skeleton," and "Reticuloendothelial System."

Body Part, Organ, or Organ Component   **23**
A collection of cells and tissues which are localized to a specific area or combine and carry out one or more specialized functions of an organism. This ranges from gross structures to small components of complex organs. These structures are relatively localized in comparison to tissues. Examples include "Eye," "Liver," "Pulmonary Artery," and "Laryngeal Mucosa."

Tissue   **24**
An aggregation of similarly specialized cells and the associated intercellular substance. Tissues are relatively non-localized in comparison to body parts, organs or organ components. Examples include "Cartilage," "Epidermis," "Basophilic muscle fibers," and "Endothelium."

Cell   **25**
The fundamental structural and functional unit of living organisms. Examples include "Erythrocytes," "Dendritic Cells," and "Histiocytes."

Cell Component   **26**
A part of a cell or the intercellular matrix, generally visible by light microscopy. Examples include "Golgi Apparatus," "Microsomes," and "Organelles."

Body Location or Region   **29**
An area, subdivision, or region of the body demarcated for the purpose of topographical description. If the term refers to a body location or region found only in non-humans, the Non-Human flag is assigned as well. Examples include "Abdomen," "Thorax," "Back," and "Gluteal Region."

Body Space or Junction   **30**
An area enclosed or surrounded by body parts or organs or the place where two anatomical structures meet or connect. If the term refers to a body space or junction found only in non-humans, the Non-Human flag is assigned as well. Examples include "Synapses," "Peritoneal Cavity," "Neuromuscular Junction," and "Knee Joint."

Body Substance   **31**
Extracellular material, or mixtures of cells and extracellular material, produced, excreted, or accreted by the body. Included here are substances such as saliva, dental enamel, sweat, and gastric acid. If the term refers to a body substance found only in non-humans, the Non-Human flag is assigned as well. Examples include "Saliva," "Necrotic debris," "Mucus," and "Amniotic Fluid."

3.   Behavior   BEH

Behavior   53
Any of the activities of humans or animals that can be observed directly by others or can be made systematically observable by the use of special strategies. If the term refers to a behavior exhibited only by non-humans, the Non-Human flag is assigned as well. The children of this type are 'Social Behavior,' and 'Individual Behavior.'

Social Behavior   54
Behavior that is a direct result or function of the interaction of humans or animals with their fellows. Examples include "Interpersonal Relations," "Social Conformity," "Acculturation," and "Communication."

Individual Behavior   55
Behavior exhibited by a human or an animal that is not a direct result of interaction with other members of the species, but which may have an effect on others. Examples include "Assertiveness," "Self Disclosure," "Nail Biting," and "Risk-Taking."

4.   Chemicals and Drugs   CHM

Chemical   103
Chemicals are viewed from two distinct perspectives in the network, functionally and structurally. Almost every chemical term is assigned at least two types, one from the structure hierarchy and at least one from the function hierarchy. The children of this type are 'Chemical Viewed Functionally,' and 'Chemical Viewed Structurally.'

Chemical Viewed Structurally   104
A chemical viewed from the perspective of its structural characteristics. Included here are terms which can mean either a salt, an ion, or a compound (e.g., "Bromates" and "Bromides"). The children of this type are 'Inorganic Chemical,' and 'Organic Chemical.' Examples include "Free Radicals," "Onium Compounds," "Salts," and "Sulfur Compounds."

Inorganic Chemical   105
The general class of substances including the elements, their ionic and isotopic counterparts, and any chemical compound whose molecules are bound together ionically rather than covalently. This includes all compounds which do not contain carbon as a principal component. The children of this type are 'Element or Ion,' 'Isotope,' and 'Inorganic Compound.' Examples include "Electrolytes," "Dithionite," and "Technetium Tc 99m Sulfur Colloid."

Element or Ion   106
One of the 109 presently known kinds of substance that comprise all matter at and above the atomic level. This includes elemental metals, rare gases, and naturally occurring radioactive elements, as well as the ionic counterparts of elements. This does not include the less abundant isotopic forms, for which the type 'Isotope' is assigned. Examples include "Aluminum," "Carbon," "Uranium," "Beryllium," and "Oxygen Ion."

Isotope   107
A form of element having the same atomic number (i.e., the same number of protons), but differing in atomic weight or mass due to the presence of one or more additional neutrons.

Included here are both stable and radioactive isotopes. Examples include "Radioisotopes," "Chromium Isotopes," "Cobalt Radioisotopes," "Co-58 (8)," and "Deuterium."

Inorganic Compound   **108**

A single compound, generally with ionic bonding, not containing carbon as a principal component (except carbides, carbonates, cyanides, cyanates, and carbon disulfide). The bonding between elements in inorganic compounds is generally ionic. Included here are inorganic acids and salts, alloys, alkalies, and minerals. Excluded are hydrocarbons. Examples include "Ferrocyanide salt," "Ammonia," and "Aluminum Hydroxide."

Organic Chemical   **109**

The general class of carbon-containing compounds, usually based on carbon chains or rings, and also containing hydrogen (hydrocarbons), with or without nitrogen, oxygen, or other elements. The bonding between elements is generally covalent. The children of this type are 'Steroid,' 'Eicosanoid,' 'Lactam,' 'Alkaloid,' 'Nucleic Acid, Nucleoside, or Nucleotide,' 'Organophosphorus Compound,' 'Amino Acid, Peptide, or Protein,' 'Carbohydrate,' and 'Lipid.' Examples include "Busulfan," "Carotene," "Trinitrobenzene," and "Metanephrine."

Steroid   **110**

 One of a group of polycyclic, 17-carbon-atom, fused-ring compounds occurring both in natural and synthetic forms. Included here are naturally occurring and synthetic steroids, bufanolides, cardanolides, homosteroids, norsteroids, and secosteroids. Examples include "Bufanolides," "Norandrostanes," "17-Hydroxycorticosteroids," and "Prednisone."

Eicosanoid   **111**

A compound structurally related to arachidonic acid. Included here are arachidonic acid, eicosanoic acid, and saturated or unsaturated derivatives of each. Examples include "Thromboxane B2," "n-Eicosanoic acid," "8,11,14-Eicosatrienoic Acid," and "Leokotriene C-4."

Lactam   **112**

A cyclic amide, usually with 4- or 5-membered rings that may or may not be fused to other rings, as in compounds structurally related to the penicillins and cephalosporins. Examples include "Penicillanic Acid," "Caprolactam," "Alloxan," and "Ticarcillin."

Alkaloid   **113**

A basic, nitrogen-containing compound of plant origin. Included here are aporphines, cinchona, curare, ergot, opium, belladonna, rauwolfia, and vinca alkaloids, among others. Examples include "Quinidine," "Aconitine," "3-Hydroxy-N-Methylmorphinan," "Vincamine," and "Rauwolfia Alkaloids."

Organophosphorus Compound   **115**

An organic compound containing phosphorus as a constituent. Included here are organic phosphinic, phosphonic and phosphoric acid derivatives and their thiophosphorus counterparts. Excluded are phospholipids and sugar phosphates. Examples include "Phosphonoacetic Acid," "Phosphoric Acid Esters," "Diphosphonates," and "Thiamine Triphosphate."

Carbohydrate   **118**

A compound consisting of carbon, hydrogen, and oxygen in which the hydrogen/oxygen ratio is the same as in water, and in which repeating units are joined through oxygen linkages. Carbohydrates are generally characterized as sugars and include mono-, di-, oligo-, and polysaccharides, glycosides, glycans, and starches. Included here are sugar phosphates. Excluded are glycolipids. Examples include "Glycosides," "Polysaccharides," "Deoxyglucose," and "Sepharose."

Lipid   **119**

  A fat or fat-derived substance, such as fatty acids, fatty alcohols, and waxes. Included here are glyco- and phospholipids. Examples include "Ceroid," "Sphingolipids," "Glycerides," and "Calcifediol."

Chemical Viewed Functionally   **120**

A chemical viewed from the perspective of its functional characteristics or pharmacological activities. The children of this type are 'Pharmacologic Substance,' 'Biomedical or Dental Material,' 'Biologically Active Substance,' 'Indicator or Reagent,' and 'Hazardous or Poisonous Substance.' Examples include "Aerosol Propellants," "Soaps," and "Food Additives."

Pharmacologic Substance   **121**

A substance used in the treatment, diagnosis, prevention, or analysis of normal and abnormal body function. This includes substances that occur naturally in the body and are administered therapeutically. Examples include "Codeine," "Antipruritics," "Ampicillin," "Cardiovascular Agents," "Insulin," and "Ganglionic Blockaders."

Biomedical or Dental Material   **122**

A substance used in biomedicine or dentistry predominantly for its physical, as opposed to chemical, properties. Included here are biocompatible materials, tissue adhesives, bone cements, resins, etc. Examples include "Anion Exchange Resins," "Dental Casting Investment," "Elastosil," "Bone Cements," and "Drug Implants."

Biologically Active Substance   **123**

A substance produced or required by an organism, of primary interest because of its role in the biologic functioning of the organism that produces it. The children of this type are 'Neuroreactive Substance or Biogenic Amine,' 'Hormone,' 'Enzyme,' 'Vitamin,' 'Prostaglandin,' and 'Immunologic Factor.' Examples include "Myelin," "Gastric Acid," "Growth Substances," and "Enzyme Precursors."

Neuroreactive Substance or Biogenic Amine   **124**

A biologic factor whose activities affect or play a role in the functioning of the nervous system. Included here are catecholamines, neuroregulators, neurophysins, etc. Examples include "Catecholamine," "Tryptamines," and "Neurotensin."

Hormone **125**

In animals, a chemical secreted by an endocrine gland that releases its products into the circulating fluid. Plant hormones or synthetic hormones that are used only to alter or control various physiologic processes, e.g., reproductive control agents, are assigned only to the type 'Pharmacologic Substance.' Hormones act as chemical messengers and regulate various physiologic processes such as growth, reproduction, metabolism, etc. They usually fall into two broad classes, steroid hormones and peptide hormones. Examples include "Gonadotropins," "Epicortisol," "Glucocorticoids," "Pentagastrin," and "MSH Release Inhibiting Hormone."

Enzyme **126**

A complex protein that living cells produce and which catalyzes specific biochemical reactions. There are six main types of enzymes, oxidoreductases, transferases, hydrolases, lyases, isomerases, and ligases. Examples include "ATP Citrate Lyase," "Acetyl CoA Acetyltransferase," "Complement Activating Enzymes," and "Glucose Oxidase."

Vitamin **127**

A substance, usually an organic chemical complex, present in natural products or made synthetically, which is essential in the diet of humans or other higher animals. Included here are vitamin precursors and provitamins. Examples include "Vitamin A," "Ascorbic Acid," "Biotin," "Riboflavin," and "25-Hydroxyvitamin D 2."

Prostaglandin **128**

A member of the group of physiologically active compounds derived from arachidonic acid. Members of the group play major roles in the reproductive process, smooth muscle stimulation, blood pressure levels, inflammation, etc. Included here are prostacyclins, thromboxanes, and leukotrienes. Examples include "Alprostadil," "Prostaglandins F," "Thromboxane A2," and "Rioprostil."

Immunologic Factor **129**

A biologic factor whose activities affect or play a role in the functioning of the immune system. Examples include "Autocrine Motility Factor," "Antilymphocyte Globulin," "HIV Antigens," and "Hepatitis surface antigen."

Indicator or Reagent **130**

A substance used in laboratory reactions, or laboratory or diagnostic tests and procedures to detect, measure, examine, or analyze other chemicals, processes, or conditions. Examples include "Contrast Media," "Buffers," "Affinity Labels," and "Dansyl Compounds."

Hazardous or Poisonous Substance **131**

A substance of concern because of its potentially hazardous or toxic effects. This would include most drugs of abuse, as well as agents that require special handling because of their toxicity. Most pharmaceutical agents, although potentially harmful, we exclude here and assign to the type 'Pharmacologic Substance.' Examples include "Paraquat," "Crack Cocaine," "Plant poison," "Carcinogens," and "Sodium Cyanide."

5. **Concepts and Ideas** **CON**

Conceptual Entity **77**
A broad type for grouping abstract entities or concepts. The children of this type in the network are 'Idea or Concept,' 'Finding,' 'Organism Attribute,' 'Intellectual Product,' 'Language,' 'Occupation or Discipline,' 'Organization,' 'Group Attribute,' and 'Group.'

Idea or Concept **78**
An abstract concept, such as a social, religious or philosophical concept. The children of this type are 'Temporal Concept,' 'Qualitative Concept,' 'Quantitative Concept,' 'Functional Concept,' and 'Spatial Concept.' Examples include "Civil Rights," "Freedom," "Ethics," "Spiritualism," and "Capitalism."

Temporal Concept **79**
A concept that pertains to time or duration. Examples include "Half-Life," "Postoperative Period," "Puerperium," "Birth Intervals," and "Postimplantation Phase."

Qualitative Concept **80**
A concept that is an assessment of some quality, rather than a direct measurement. Examples include "Clinical Competence," "Quality of Health Care," "Abuse of Health Services," and "Consumer Satisfaction."

Quantitative Concept **81**
A concept that involves the dimensions, quantity or capacity of something using some unit of measure, or which involves the quantitative comparison of entities. Examples include "Metric System," "Body Height," "Age Distribution," and "Secretory Rate."

Spatial Concept **82**
A location, region, or space, generally having definite boundaries. The children of this type are 'Body Space or Junction,' 'Body Location or Region,' 'Molecular Sequence,' and 'Geographic Area.'

Regulation or Law **89**
An intellectual product resulting from legislative or regulatory activity. Examples include "Building Codes," "Criminal Law," "Health Planning Guidelines," and "Security Measures."

Group Attribute **102**
A conceptual entity that refers to the frequency or distribution of certain characteristics or phenomena in certain groups. Examples include "Neonatal Mortality," "Life Expectancy," "Family Size," "Population Characteristics," and "Group Structure."

Functional Concept **169**
A concept that is of interest because it pertains to the carrying out of a process or activity. This type has one child in the network, 'Body System.' Examples include "Solar System."

Intellectual Product 170

A conceptual entity resulting from human endeavor. Terms assigned to this type generally refer to information created by humans for some purpose. This type has one child in the network, 'Regulation or Law.' Examples include "Bayes Theorem," "Information Systems," and "Literature."

Language 171

The system of communication used by a particular nation or people. Examples include "Afrikaans," "Greek, Modern," "braille," and "Welsh."

6. Diseases and Pathologic Processes DIS

Pathologic Function 46

A disordered process, activity, or state of the organism as a whole, of a body system or systems, or of multiple organs or tissues. Included here are normal responses to a negative stimulus as well as pathololgic conditions or states that are less specific than a disease. Pathologic functions frequently have systemic effects. The children of this type are 'Disease or Syndrome,' 'Cell or Molecular Dysfunction,' and 'Experimental Model of Disease.' Examples include "Shock," "Infarction," "Cerebral Anoxia," "Inflammation," "Anaphylaxis," and "Acid-Base Imbalance."

Disease or Syndrome 47

A condition that alters or interferes with a normal process, state, or activity of an organism. It is usually characterized by the abnormal functioning of one or more of the host's systems, parts, or organs. Included here is a complex of symptoms descriptive of a disorder. This type has one child in the network, 'Mental or Behavioral Dysfunction.' Examples include "Diabetes Mellitus," "Brain Neoplasms," "Nephrotic Syndrome," "Dumping Syndrome," and "Malabsorption Syndromes."

Mental or Behavioral Dysfunction 48

A clinically significant dysfunction whose major manifestation is behavioral or psychological. These dysfunctions may have identified or presumed biological etiologies or manifestations. Examples include "Memory Disorders," "Agoraphobia," "Hallucinations," "Anxiety States, Neurotic," and "Cyclothymic Disorder."

Experimental Model of Disease 50

A representation in a non-human organism of a human disease for the purpose of research into its mechanism or treatment. Examples include "Avian Leukosis," "Streptozotocin Diabetes," "Ehrlich Ascites Tumor," and "Melanoma, Experimental."

Finding 33

That which is discovered by direct observation or measurement of an organism attribute or condition, including the clinical history of the patient. The children of this type are 'Laboratory or Test Result' and 'Sign or Symptom.' Examples include "Occupational problem," "Birth History," and "Downward displacement of diaphragm."

Laboratory or Test Result   **34**
The outcome of a specific test to measure an attribute or to determine the presence, absence, or degree of a condition. Laboratory or test results are inherently quantitative and, thus, we do not assign the additional type 'Quantitative Concept.' Examples include "Apgar Score," "Gastric acidity," "Blood Volume," and "Hypernatremia."

Sign or Symptom   **184**
An observable manifestation of a disease or condition based on clinical judgment, or a manifestation of a disease or condition that the patient experiences and reports as a subjective observation. Examples include "Pallor," "Body Weight Changes," "Echolalia," "Hyperventilation," "Pain," "Toothache," "Nausea," and "Cough." Formerly semantic types "Signs" (# 35) and "Symptoms" (# 36).

Injury or Poisoning   **37**
A traumatic wound, injury, or poisoning caused by an external agent or force. Examples include "Frostbite," "Mushroom Poisoning," "Acid burn," "Snake Bites," and "Ergotism."

7.   Geographic Areas   **GEO**

Geographic Area   **83**
A geographic location, generally having definite boundaries. Examples include "Canada," "Baltimore," "Far East," "Arctic Regions," and "Cities."

8.   Groups   **GRP**

Group   **96**
A conceptual entity referring to the classification of individuals according to certain shared characteristics. The children of this type are 'Professional or Occupational Group,' 'Population Group,' 'Family Group,' 'Age Group,' and 'Patient or Disabled Group.'

Professional or Occupational Group   **97**
An individual or individuals classified according to their vocation. Examples include "Zoologist," "Physicians," "Hospital Volunteers," "Clergy," "Military Personnel," and "Demographers."

Population Group   **98**
An individual or individuals classified according to their sex, racial origin, religion, common place of living, financial or social status, or some other cultural or behavioral attribute. Examples include "Asian Americans," "Ethnic Groups," "Homeless Persons," and "Low-Income Population."

Family Group   **99**
An individual or individuals classified according to their family relationships or relative position in the family unit. Examples include "Only Child," "Single Parent," "Surrogate Mothers," and "Twins."

Age Group   **100**
An individual or individuals classified according to their age. Examples include "Adult," "Infant, Premature," "Adolescents," and "Octogenarian."

Patient or Disabled Group   **101**
An individual or individuals classified according to a disability, disease, condition or treatment.
Examples include "Amputees," "Child, Institutionalized," and "Inpatients."

9.   Molecular Biology   **MOL**

Macromolecular Structure   **27**
A very large molecule whose structure contributes to the physiology of the cell. This type has
one child in the network, 'Gene or Genome.' Examples include "Scleroproteins," "Histone H5,"
and "Collagen."

Gene or Genome   **28**
A specific sequence, or in the case of the genome the complete sequence, of nucleotides along a
molecule of DNA or RNA (in the case of some viruses) which represent the functional units of
heredity. Examples include "Alleles," "Genes, Structural," "Genome, Human," and "c-Ha-ras
Genes."

Molecular Function   **44**
A physiologic function occurring at the molecular level. This type has one child in the network,
'Genetic Function.' Examples include "Electron Transport," "Glycolysis," and "Binding,
Competitive."

Genetic Function   **45**
Functions of or related to the maintenance, translation or expression of the genetic material.
Examples include "Amino Acid Activation," "Early Gene Transcription," "Gene
Amplification," and "RNA Splicing."

                                                                      Cell or
Molecular Dysfunction   **49**
A pathologic function inherent to cells, parts of cells, or molecules. Examples include "Cellular
necrosis," "Wallerian Degeneration," "Cell Transformation, Neoplastic," and "DNA Damage."

Molecular Biology Research Technique   **63**
Any of the techniques used in the study of or the directed modification of the gene complement
of a living organism. Examples include "Genetic Engineering," "Heterozygote Detection,"
"Sequence Homology Determination," and "Blotting, Northern."

Molecular Sequence   **85**
A broad type for grouping the collected sequences of amino acids, carbohydrates, and
nucleotide sequences. Descriptions of these sequences are generally reported in the published
literature and/or are deposited in and maintained by data banks such as GenBank, European
Molecular Biology Laboratory (EMBL), National Biomedical Research Foundation (NBRF), or
other sequence repositories. The children of this type are 'Nucleotide Sequence,' 'Amino Acid
Sequence,' and 'Carbohydrate Sequence.'

Nucleotide Sequence **86**

The sequence of purines and pyrimidines in nucleic acids and polynucleotides. Included here are nucleotide-rich regions, conserved sequence, and DNA transforming region. Examples include "AT Rich Region," "Base Sequence," "Direct Repeat," and "Exons."

Amino Acid Sequence **87**

The sequence of amino acids as arrayed in chains, sheets, etc., within the protein molecule. It is of fundamental importance in determining protein structure.

Carbohydrate Sequence **88**

The sequence of carbohydrates within polysaccharides, glycoproteins, and glycolipids.

Nucleic Acid, Nucleoside, or Nucleotide **114**

A complex compound of high molecular weight occurring in living cells. These are basically of two types, ribonucleic (RNA) and deoxyribo-nucleic (DNA) acids, both of which consist of nucleotides (nucleoside phosphates linked together by phosphate bridges). Examples include "Adenosine," "Dibutyryl Cyclic AMP," "Deoxyadenosines," and "Nicotinamide Mononucleotide."

Amino Acid, Peptide, or Protein **116**

Amino acids and chains of amino acids connected by peptide linkages. Examples include "Glycoproteins," "Myoglobin," "Alanine," "Sulfatase," and "Acetylcysteine."

Gene Product **<deleted>**

Formerly semantic type # 117.

10. **Physical Objects** **OBJ**

Entity **71**

A physical or conceptual entity. The children of this type are 'Physical Object,' and 'Conceptual Entity.'

Physical Object **72**

An object perceptible to the sense of vision or touch. The children of this type in the network are 'Organism,' 'Anatomical Structure,' 'Manufactured Object,' and 'Substance.'

Manufactured Object **73**

A physical object made by human beings. The children of this type in the network are 'Medical Device,' and 'Research Device.' Examples include "Cooking and Eating Utensils," "Bookplates," "Adhesive tape," and "Car Seats."

Medical Device **74**

A manufactured object used primarily in the diagnosis, treatment, or prevention of physiologic or anatomic disorders. Examples include "Hip Prosthesis," "Oxygenators," "Syringes," and "Obstetrical Forceps."

Research Device   **75**

A manufactured object used primarily in carrying out scientific research or experimentation. Examples include "Questionnaires," "Atmosphere Exposure Chambers," and "Cell-Free System."

Substance   **167**

A material with definite or fairly definite chemical composition. The children of this type are 'Chemical,' 'Body Substance,' and 'Food.' Examples include "Charcoal," "Foreign Bodies," "Air," "Fossils," and "Electrons."

Food   **168**

Any substance containing nutrients, such as carbohydrates, proteins, and fats, that a living organism can ingest and metabolize into energy and body tissue. Some foods are naturally occurring, others are either partially or entirely synthetic. Examples include "Egg Yolk," "Nuts," "Beverages," and "Margarine."

11. Occupations and Organizations   OCC

Occupation or Discipline   **90**

A vocation, academic discipline, or field of study, or a subpart of an occupation or discipline. If the term refers to the individuals who have the vocation, the we assign the type 'Professional or Occupational Group.' This type has one child in the network, 'Biomedical Occupation or Discipline.' Examples include "Anthropology," "Ecology," "Linguistics," "Air Microbiology," and "Craniology."

Biomedical Occupation or Discipline   **91**

A vocation, academic discipline, or field of study related to biomedicine. Examples include "Dermatology," "Emergency Nursing," "Dentistry," "Family Practice," and "Cellular Neurobiology."

Organization   **92**

The result of uniting for a common purpose or function. The continued existence of an organization is not dependent on any of its members, its location, or particular facility. Components or subparts of organizations are also included here. The children of this type are 'Health Care Related Organization,' 'Professional Society,' and 'Self-help or Relief Organization.' Examples include "Universities," "United Nations," "United States Environmental Protection Agency," "European Economic Community," and "Labor Unions."

Health Care Related Organization   **93**

An established organization which carries out specific functions related to health care delivery or research in the life sciences. Terms for health care related professional societies are assigned the type Professional Society. Examples include "American Cancer Society," "Health Care Coalitions," "Ambulatory Care Facilities," and "Pan American Health Organization."

Professional Society   **94**

An organization uniting those who have a common vocation or who are involved with a common field of study. Examples include "American Medical Association," "Library Associations," and "International Council of Nurses."

Self-help or Relief Organization   **95**
An organization whose purpose and function is to provide assistance to the needy or to offer
support to those sharing similar problems. Examples include "Alcoholics Anonymous," "Red
Cross," "Charities," and "Tuberculosis Societies."

12.   Organism   **ORG**

Organism   **1**
Generally, a living individual, including all plants and animals. The children of this type are
'Plant,' 'Fungus,' 'Virus,' 'Rickettsia or Chlamydia,' 'Bacterium,' and 'Animal.' Examples include
"Plankton," "Homozygote," and "Radiation Chimera."

Plant   **2**
An organism having cellulose cell walls, growing by synthesis of inorganic substances,
generally distinguished by the presence of chlorophyll, and lacking the power of locomotion.
Plant parts are included here as well. This type has one child in the network, 'Alga.' Examples
include "Potatoes," "Pollen," and "Vegetables."

Alga   **3**
A chiefly aquatic plant that contains chlorophyll, but does not form embryos during
development and lacks vascular tissue. Examples include "Chlorella," "Laminaria," "Seaweed,"
and "Anabaena."

Fungus   **4**
A eukaryotic organism characterized by the absence of chlorophyll and the presence of a rigid
cell wall. Included here are both slime molds and true fungi such as yeasts, molds, mildews,
and mushrooms. Examples include "Blastomyces," "Neurospora," "Aspergillus clavatus," and
"Helminthosporium."

Virus   **5**
An organism consisting of a core of a single nucleic acid enclosed in a protective coat of
protein. A virus may replicate only inside a host living cell. A virus exhibits some but not all of
the usual characteristics of living things. Examples include "Parvoviridae," "Foot-and-Mouth
Disease Virus," and "Echovirus 6."

Rickettsia or Chlamydia   **6**
An organism intermediate in size and complexity between a virus and a bacterium, and which is
parasitic within the cells of insects and ticks. Included here are all the chlamydias, also called
"PLT" for psittacosis- lymphogranuloma venereum-trachoma. Examples include "Anaplasma,"
"Bartonella," and "Chlamydia trachomatis."

Bacterium   **7**
A small, typically one-celled, prokaryotic micro-organism. Examples include "Bacillus cereus,"
"Acetobacter," "Bordetella pertussis," and "Cytophaga."

Animal   **8**
An organism with eukaryotic cells, and lacking stiff cell walls, plastids and photosynthetic
pigments. The children of this type are 'Invertebrate,' and 'Vertebrate.' Examples include
"Animals, Poisonous," "Animals, Newborn," and "Animals, Laboratory."

Invertebrate   **9**

An animal which has no spinal column. This type has no children in the network and is assigned to all invertebrate animals. Examples include "Helminths," "Octopus," "Wasps," and "Protozoa."

Vertebrate   **10**

An animal which has a spinal column. The children of this type are 'Amphibian,' 'Bird,' 'Fish,' 'Reptile,' and 'Mammal.'

Amphibian   **11**

A cold-blooded, smooth-skinned vertebrate which characteristically hatches as an aquatic larva, breathing by gills. When mature, the amphibian breathes with lungs. Examples include "Salamandra," "Urodela," and "Frog."

Bird   **12**

A vertebrate having a constant body temperature and characterized by the presence of feathers. Examples include "Canaries," "Pigeons," and "Quail."

Fish   **13**

A cold-blooded aquatic vertebrate characterized by fins and breathing by gills. Included here are fishes having either a bony skeleton, such as a perch, or a cartilaginous skeleton, such as a shark, or those lacking a jaw, such as a lamprey or hagfish. Examples include "Bass," "Eels," and "Carp."

Reptile   **14**

A cold-blooded vertebrate having an external covering of scales or horny plates. Reptiles breathe by means of lungs and are generally egg-laying. Examples include "Lizards," "Snakes," "Turtles," and "Iguanas."

Mammal   **15**

A vertebrate having a constant body temperature and characterized by the presence of hair, mammary glands and sweat glands. This type has one child in the network, 'Human.' Examples include "Bears," "Macaca," "Hamsters," and "Kangaroos."

Human   **16**

Modern man, the only remaining species of the Homo genus. If a term describes a human being from the point of view of occupational, family, social status, etc., then a type from the 'Group' hierarchy is assigned instead. A small number of terms have been assigned this type, e.g., "Hominidae," "Man," and "Homo sapiens."

13. Physiology   PHY

Biologic Function   **38**
A state, activity or process of the body or one of its systems or parts. If the term refers to a biologic function found only in non-humans, the Non-Human flag is assigned as well. The children of this type are 'Physiologic Function,' and 'Pathologic Function.'

Physiologic Function   **39**
A normal process, activity, or state of the body. The children of this type in the network are 'Organism Function,' 'Organ or Tissue Function,' 'Cell Function,' and 'Molecular Function.'

Organism Function   **40**
A physiologic function of the organism as a whole, of multiple organ systems, or of multiple organs or tissues. This type has one child in the network, 'Mental Process.' Examples include "Growth," "Sleep," "Hibernation," and "Homeostasis."

Mental Process   **41**
A physiologic function involving the mind or cognitive processing. Examples include "Avoidance Learning," "Pattern Recognition," "Anger," and "Cognition."

Organ or Tissue Function   **42**
A physiologic function of a particular organ, organ system, or tissue. Examples include "Osteogenesis," "Tooth Calcification," and "Renal Circulation."

Cell Function   **43**
A physiologic function inherent to cells or cell components. Examples include "Cell Division," "Cell Cycle," "Erythrocyte Aggregation," and "Lymphocyte Transformation."

Organism Attribute   **32**
A property of the organism or its major parts. If the term refers to an attribute found only in non-humans, the Non-Human flag is assigned as well. Examples include "Body Weight," "Body Temperature," "Ambidexterity," and "Eye Color."

14. Procedures   PRO

Laboratory Procedure   **59**
A procedure, method, or technique used to determine the composition, quantity, or concentration of a specimen, which is carried out in a clinical laboratory. Included here are procedures which measure the times and rates of reactions. Examples include "Radioimmunoassay," "Legionella titer," "Blood Protein Electrophoresis," and "Spectrophotometry."

Diagnostic Procedure   **60**
A procedure, method, or technique used to determine the nature or identity of a disease or disorder. This excludes procedures which are primarily carried out on specimens in a laboratory. Examples include "Electrocardiography," "Ultrasonography," "Heart Auscultation," and "Personality Assessment."

Therapeutic or Preventive Procedure   **61**

A procedure, method, or technique designed to prevent a disease or a disorder, or to improve physical function, or used in the process of treating a disease or injury. Examples include "Cesarean Section," "Counseling," "Vaccine Therapy," and "Cochlear Implant."

15. **Unknown/Untyped**   **UNK**

Unknown/Untyped   **999**

A vocabulary concept where the semantic type is either unknown or by its recent addition to the vocabulary, remains untyped. Most untyped concepts acquire a semantic assignment by either further investigation or usage.

This page left intentionally blank.

Index