

**WHO ICD11 Wiki –  
LexWiki, Semantic MediaWiki and  
the International Classification of Diseases**

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**Harold Solbrig**

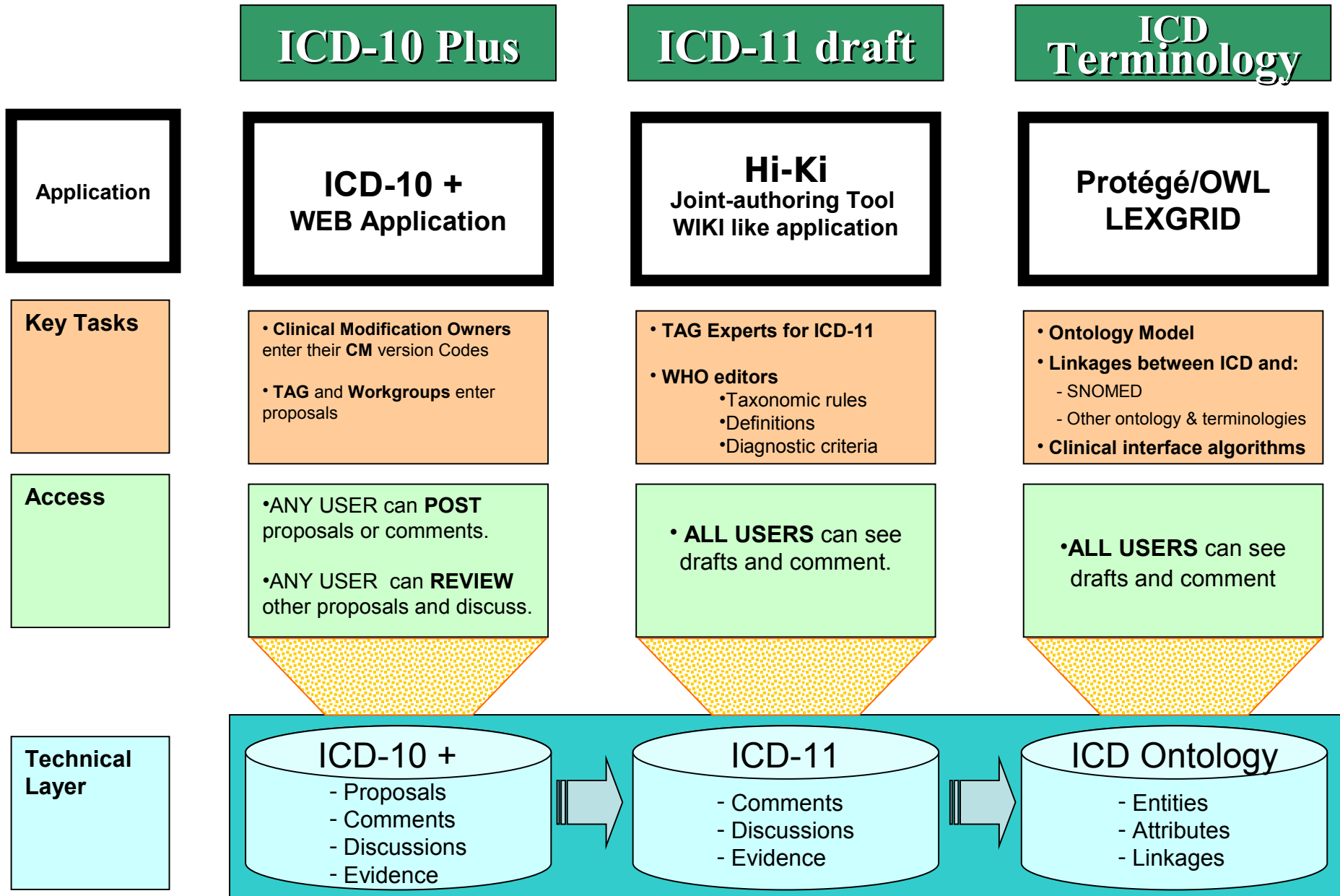
Division of Biomedical Statistics and Informatics

Mayo Clinic College of Medicine

Ontolog Semantic Wiki Mini-series Session 4

January 22, 2009

# How I K classify in ICD



# ICD 11 Editing Process in Development



Export and Load

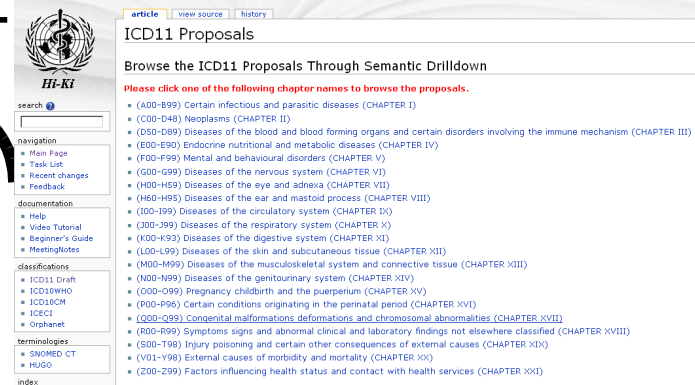
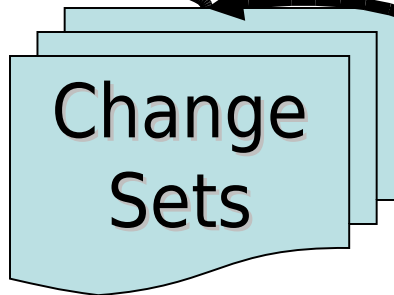


OWL RDF dump

Review and select

OWL DL Collaborative Protégé

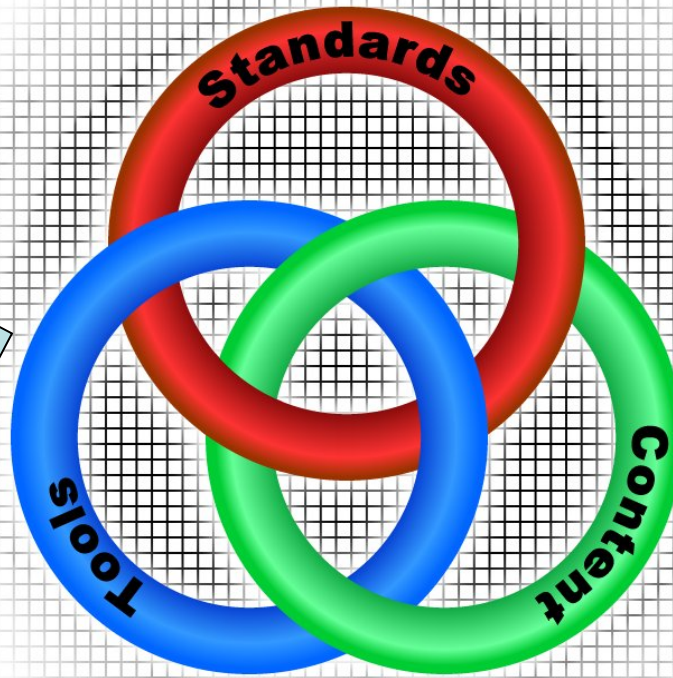
HL7/ISO format



# LexGrid Terminology Model

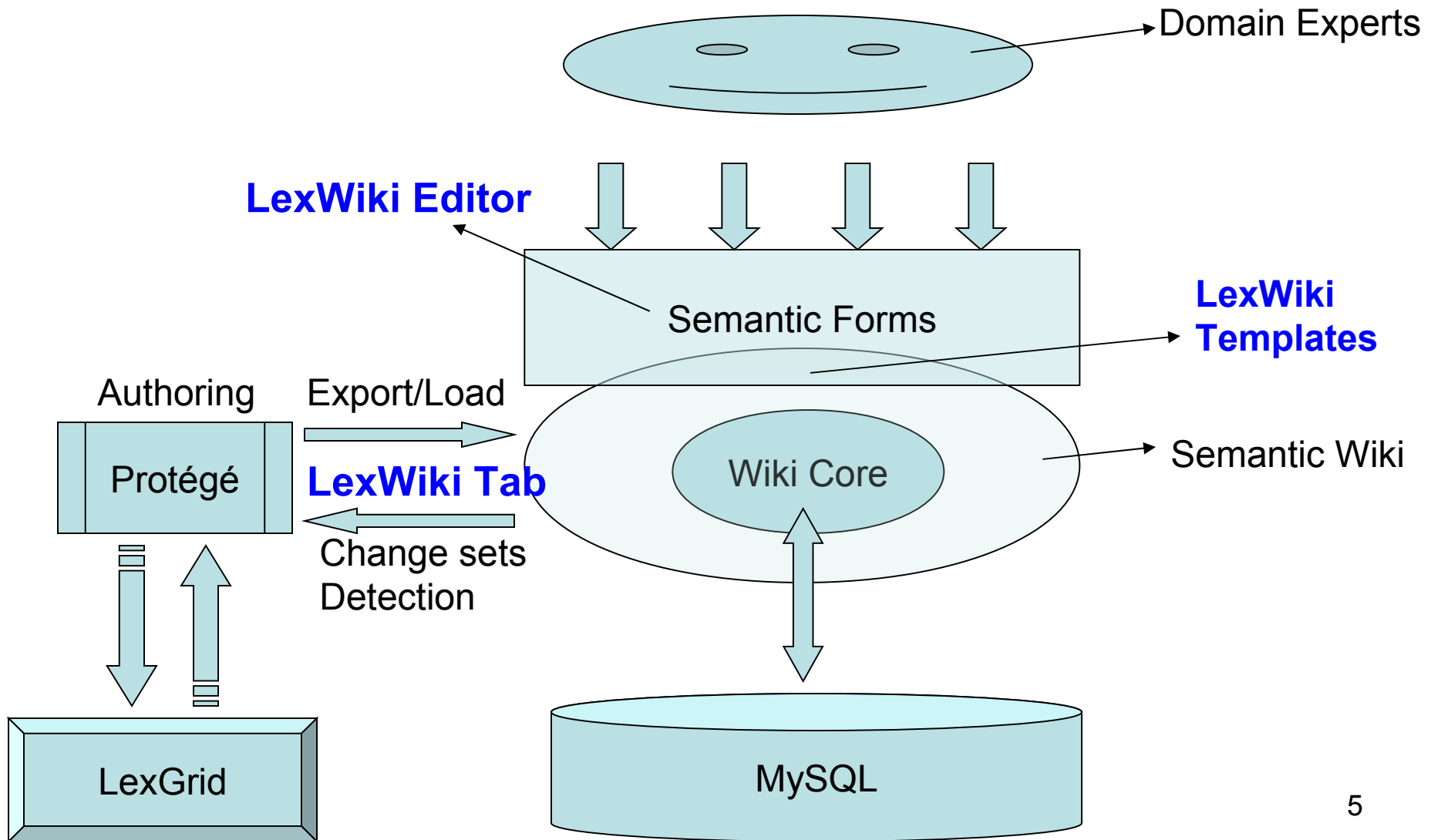
- LexWiki Tools
- Representation
  - Proposal
  - RDF rendering

- Protégé Tools
- Content import/export
  - Change set detection
  - Robust DL capable editor



ICD11 Draft  
ICD10WHO  
ICD10CM  
ICD10AM  
ICD10CA  
ICD10 INDEX  
ICECI  
Orphanet  
SNOMED CT  
HUGO  
...

# LexWiki: A Collaboration Platform



# LexWiki Features

- Browsing support
  - For each coding scheme
    - Hierarchy view
    - Hypergraph view
    - Index browsing
  - For each category
    - Lexical Characteristics
    - Definitional Characteristics
    - Inclusion & Exclusion
  - Among coding scheme
    - Cross reference
    - Query enhancement

# Hierarchical View

article view source history Log in / Create account

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## ICD11 DRAFT

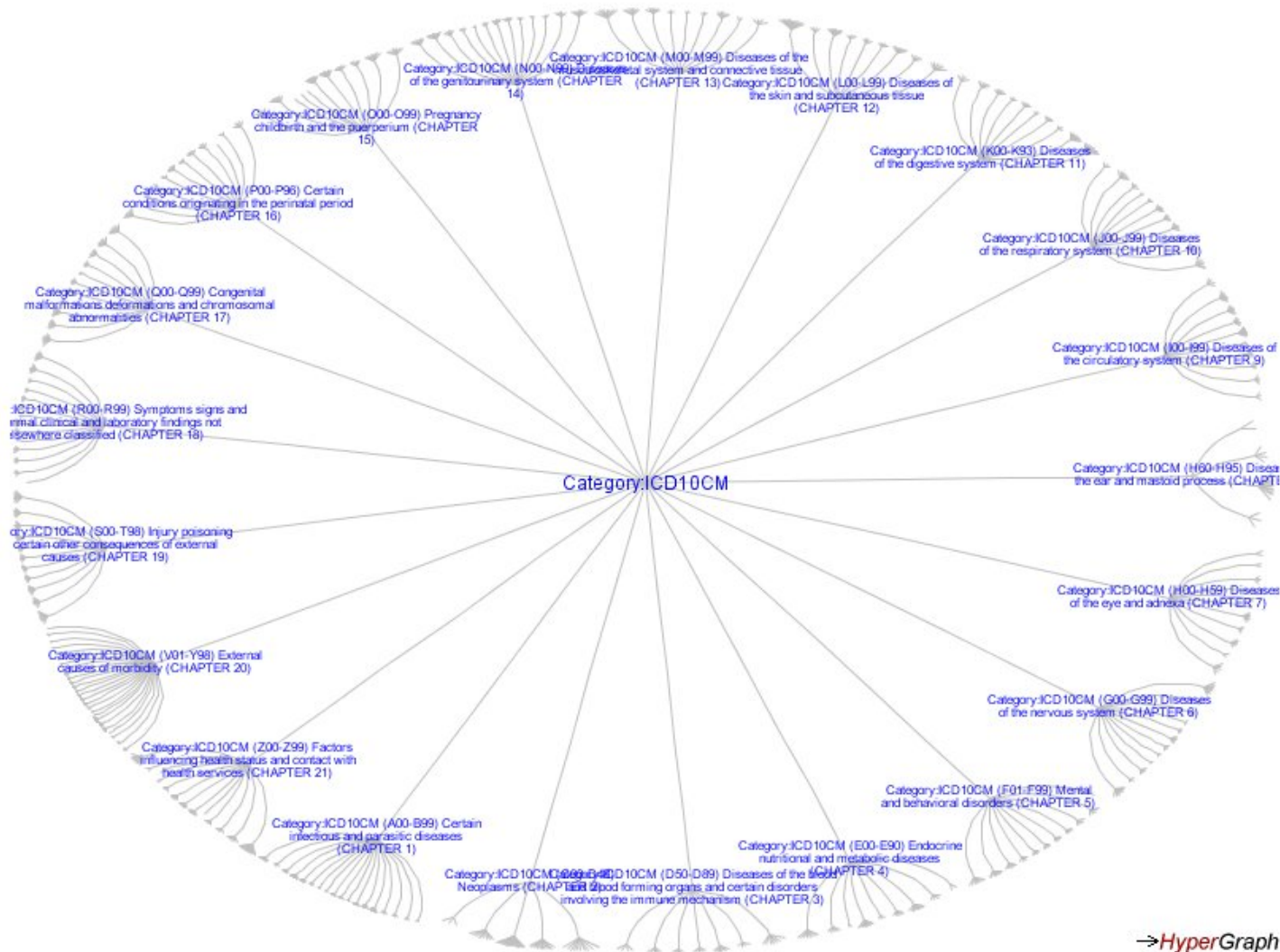
**Hints:**

1. To expand the category tree, please click **[+]** .
2. To access a category page, please click the label of that category.
3. Click the label of a category, you will be directed to a new tab or a new window.

**[-]** ICD11

- [+]** (A00-B99) Certain infectious and parasitic diseases (CHAPTER I)
- [-]** (C00-D48) Neoplasms (CHAPTER II)
  - [-]** (C00-C97) Malignant neoplasms
    - [+]** (C00-C75) Malignant neoplasms stated or presumed to be primary of specified sites except of lymphoid haematopoietic and related tissue
    - [-]** (C76-C80) Malignant neoplasms of ill defined secondary and unspecified sites
      - [-]** (C76) Malignant neoplasm of other and ill defined sites
        - [+]** (C76.0) Head face and neck
        - [+]** (C76.1) Thorax
        - [+]** (C76.2) Abdomen
        - [+]** (C76.3) Pelvis
        - [+]** (C76.4) Upper limb
        - [+]** (C76.5) Lower limb
        - [+]** (C76.7) Other ill defined sites
        - [+]** (C76.8) Overlapping lesion of other and ill defined sites
      - [+]** (C77) Secondary and unspecified malignant neoplasm of lymph nodes
      - [+]** (C78) Secondary malignant neoplasm of respiratory and digestive organs
      - [+]** (C79) Secondary malignant neoplasm of other sites
      - [+]** (C80) Malignant neoplasm without specification of site
    - [+]** (C81-C96) Malignant neoplasms stated or presumed to be primary of lymphoid haematopoietic and related tissue
    - [+]** (C97) Malignant neoplasms of independent (primary) multiple sites
  - [+]** (D00-D09) In situ neoplasms
  - [+]** (D10-D36) Benign neoplasms
  - [+]** (D37-D48) Neoplasms of uncertain or unknown behaviour (see note before D37)
- [+]** (D50-D89) Diseases of the blood and blood forming organs and certain disorders involving the immune mechanism (CHAPTER III)
- [+]** (E00-E90) Endocrine nutritional and metabolic diseases (CHAPTER IV)
- [+]** (F00-F99) Mental and behavioural disorders (CHAPTER V)
- [+]** (G00-G99) Diseases of the nervous system (CHAPTER VI)
- [+]** (H00-H59) Diseases of the eye and adnexa (CHAPTER VII)
- [+]** (H60-H95) Diseases of the ear and mastoid process (CHAPTER VIII)
- [+]** (I00-I99) Diseases of the circulatory system (CHAPTER IX)
- [+]** (J00-J99) Diseases of the respiratory system (CHAPTER X)
- [+]** (K00-K93) Diseases of the digestive system (CHAPTER XI)
- [+]** (L00-L99) Diseases of the skin and subcutaneous tissue (CHAPTER XII)
- [+]** (M00-M99) Diseases of the musculoskeletal system and connective tissue (CHAPTER XIII)
- [+]** (N00-N99) Diseases of the genitourinary system (CHAPTER XIV)

# ICD10CM Hypergraph





# ICD11 Category ↔ Category Page

[category](#) [view source](#) [Log in / create account](#)

## Category:ICD11 (I42.0) Dilated cardiomyopathy

[Name & Textual Definition](#) [Definitional Characteristics](#) [Inclusions & Exclusions](#) [Proposals](#) [Factbox](#)

### Name and Textual Definition

**Preferred Name:** Dilated\_cardiomyopathy  
**Synonym:** dilated cardiomyopathy(Source:IND)  
**Synonym:** chronic dilated cardiomyopathy(Source:IND)  
**Synonym:** congestive cardiomyopathy(Source:IND)  
**Synonym:** dilated congestive cardiomyopathy(Source:IND)  
**Synonym:** dilative cardiomyopathy(Source:IND)  
**Synonym:** idiopathic cardiomegaly(Source:IND)  
**Synonym:** idiopathic dilated cardiomyopathy.(Source:IND)

**Definition:** A form of CARDIAC MUSCLE disease that is characterized by ventricular dilation, VENTRICULAR DYSFUNCTION, and HEART FAILURE. Risk factors include SMOKING; ALCOHOL DRINKING; HYPERTENSION; INFECTION; PREGNANCY; and mutations in the LMNA gene encoding LAMIN TYPE A, a NUCLEAR LAMINA protein.(Source:MSH2008\_2008\_02\_04)

**Definition:** dilated cardiomyopathy : A cardiomyopathy in which one or both of the ventricles are dilated. "Dilatation often becomes severe and is invariably accompanied by hypertrophy. Systolic ventricular function is impaired. Congestive heart failure may or may not supervene. Presentat(Source:IND)

**Index Terms**

- [Cardiomyopathy \(familial\) \(idiopathic\)/congestive](#)
- [Cardiomyopathy \(familial\) \(idiopathic\)/dilated](#)

### References

[See ICD10xm Hierarchy](#) [\[show\]](#)

[Form:LexWiki ICD11 Form](#)

### Supercategories

[Category: ICD11 \(I42\) Cardiomyopathy](#)

# Cross references among coding schemes

## References

---

**See ICD10xm Hierarchy**

[\[hide\]](#)

### ICD10CM

- [\[-\] ST elevation \(STEMI\) myocardial infarction of anterior wall\(I21.0\)](#)
- [\[-\] ST elevation \(STEMI\) myocardial infarction involving left anterior descending coronary artery\(I21.02\)](#)
- [\[-\] ST elevation \(STEMI\) myocardial infarction involving left main coronary artery\(I21.01\)](#)
- [\[-\] ST elevation \(STEMI\) myocardial infarction involving other coronary artery of anterior wall\(I21.09\)](#)

### ICD10AM

- [\[-\] Acute transmural myocardial infarction of anterior wall\(I21.0\)](#)

# Query enhancement

The screenshot illustrates a search interface for medical codes. The main search bar contains the text "myocar infarc acute". Below it, a list of ICD11 codes is shown, including "ICD11 Acute transmural myocardial infarction of anterior wall(I21.0)", "ICD11 (I23.8) Other current myocardial infarction", "ICD11 (I23.6) Thrombotic myocardial infarction", "ICD11 (I23.5) Rupture of myocardium", "ICD11 (I23.4) Rupture of ventricle", "ICD11 (I23.3) Rupture of atrium", "ICD11 (I23.2) Ventricular septal defect", "ICD11 (I23.1) Atrial septal defect", "ICD11 (I23.0) Haemopericardium", "ICD11 (I23) Certain current myocardial infarction", "ICD11 (I21.9) Acute myocardial infarction", "ICD11 (I21.4) Acute subendocardial myocardial infarction", "ICD11 (I21.3) Acute transmural myocardial infarction", and "ICD11 (I21.2) Acute transmural myocardial infarction".

Three smaller search windows are overlaid on the main results, each showing a search for "myocardial infarction" and a list of related codes:

- The first window shows "icd10cm myocar infarc" and lists ICD10CM codes such as "ICD10CM Ventricular septal defect as current complication following acute myocardial infarction", "ICD10CM Thrombosis of atrium", "ICD10CM Subsequent non ST elevation myocardial infarction", "ICD10CM Subsequent ST elevation myocardial infarction", and "ICD10CM ST elevation (STEMI) myocardial infarction".
- The second window shows "sct myocar infarc" and lists SCT codes such as "SCT X Subsequent myocardial infarction of unspecified site(195547003)", "SCT X Subsequent myocardial infarction of unspecified site(194860008)", "SCT X Subsequent myocardial infarction of other sites(195546007)", "SCT X Other current complications following acute myocardial infarction(194859003)", "SCT X Acute transmural myocardial infarction of unspecified site(195545003)", "SCT X Acute transmural myocardial infarction of unspecified site(194807003)", "SCT V Observation for suspected myocardial infarction(316573009)", "SCT V Family history of myocardial infarction(315821009)", "SCT True posterior myocardial infarction(194802003)", "SCT Thrombosis of atrium auricular appendage and ventricle as current complication(194859006)", "SCT Subsequent myocardial infarction of other sites(194859003)", "SCT Subsequent myocardial infarction of inferior wall(194858006)", "SCT Subsequent myocardial infarction of anterior wall(194857001)", "SCT Subsequent myocardial infarction(194856005)", and "SCT Silent myocardial infarction(233843008)".

Humorous text "Hi-Ki is a jokular acronym rhyming with Wil" is repeated in the background of the search windows.

# LexWiki Features

- Authoring support
  - Proposal mechanism
    - Proposal creation (LexWiki Editor)
    - Proposal commenting
    - Evidence attachment
    - Proposal browsing
  - Change set detection
    - Chang and Annotation Ontology (ChAO)
    - Formalism rendering/Integrity check in collaborative Protégé

# Proposal tabs

category propose change propose child concept propose removal

## Category:ICD11 (I42.0) Dilated cardiomyopathy

Name & Textual Definition

Definitional Characteristics

Inclusions & Exclusions

Proposals

Factbox

### Name and Textual Definition

**Preferred Name:** Dilated\_cardiomyopathy

**Synonym:** dilated cardiomyopathy(Source:IND)

**Synonym:** chronic dilated cardiomyopathy(Source:IND)

**Synonym:** congestive cardiomyopathy(Source:IND)

**Synonym:** dilated congestive cardiomyopathy(Source:IND)

**Synonym:** dilative cardiomyopathy(Source:IND)

**Synonym:** idiopathic cardiomegaly(Source:IND)

**Synonym:** idiopathic dilated cardiomyopathy.(Source:IND)

**Definition:** A form of CARDIAC MUSCLE disease that is characterized by ventricular dilation, VENTRICULAR DYSFUNCTION, and HEART FAILURE. Risk factors include SMOKING; ALCOHOL DRINKING; HYPERTENSION; INFECTION; PREGNANCY; and mutations in the LMNA gene encoding LAMIN TYPE A, a NUCLEAR LAMINA protein.(Source:MSH2008\_2008\_02\_04)

**Definition:** dilated cardiomyopathy : A cardiomyopathy in which one or both of the ventricles are dilated. "Dilatation often becomes severe and is invariably accompanied by hypertrophy. Systolic ventricular function is impaired. Congestive heart failure may or may not supervene. Presentat(Source:IND)

#### Index Terms

[Cardiomyopathy \(familial\) \(idiopathic\)/congestive](#)

[Cardiomyopathy \(familial\) \(idiopathic\)/dilated](#)

# LexWiki Editor (Semantic Forms)

[special](#)

Add a proposal: Proposal for ICD11 (I42.0) Dilated cardiomyopathy by Guoqian at 20090120210047

**Save this proposal**

**Meta** | [Name/Definition](#) | [Type/Anatomy/Pathophysiology](#) | [Manifestation](#) | [Etiology](#) | [Temporal Relation/Severity](#)

**WorkFlow CurationStatus:**

## Purpose of Proposal

- Purpose of the Proposal:**
- To identify a new disease entity
  - To better reflect current scientific knowledge
  - To improve clinical utility/usefulness of ICD
  - To reflect changes in how disorders are viewed
  - To improve compatibility within WHO Family of International Classifications
  - Other

## Rationale of Proposal

**Rationale for Proposal:**

Summary:

- This is a minor edit  Watch this page

**Save this proposal** | [Show preview](#) | [Show changes](#) | [cancel](#)

# Propose changes

special

Add a proposal: Proposal for ICD11 (I42.0) Dilated cardiomyopathy by Guoqian at 20090120210047

Save this proposal

Meta Name/Definition Type/Anatomy/Pathophysiology Manifestation Etiology Temporal Relation/Severity

## Preferred Name

Preferred Name: Dilated\_cardiomyopathy\_Changed

## Synonym

Synonym: dilated cardiomyopathy

Source: IND

Reference URL(optional):

Reference PMID(optional):

Reference ISBN(optional):

Remove this Synonym

Synonym: chronic dilated cardiomyopathy

Source: IND

Reference URL(optional):

Reference PMID(optional):

Reference ISBN(optional):

Remove this Synonym

# Propose Associations

special

Add a proposal: Proposal for ICD11 (I42.0) Dilated cardiomyopathy by Guoqian at 20090120210047

Save this proposal

Meta Name/Definition **Type/Anatomy/Pathophysiology** Manifestation Etiology Temporal Relation/Severity

Type

Type: Disease

Anatomical Site

Anatomical Site:

sct myocardium struc

Defining Strength:

Source:

Reference URL(optional):

Reference PMID(optional):

Reference ISBN(optional):

Remove this Anatomical Site

Add another Anatomical Site

- SCT Structure of subendocardial **myocardium**(58148009)
- SCT Structure of posterior **myocardium**(19914004)
- SCT Structure of **myocardium** of ventricular septum(83654002)
- SCT Structure of **myocardium** of ventricle(7872004)
- SCT Structure of **myocardium** of right ventricle(22050009)
- SCT Structure of **myocardium** of right atrium(27295003)
- SCT Structure of **myocardium** of posteroseptal region(10846005)
- SCT Structure of **myocardium** of posterolateral region(33272004)
- SCT Structure of **myocardium** of left ventricle(49848007)
- SCT Structure of **myocardium** of left atrium(15713008)
- SCT Structure of **myocardium** of inferolateral region(16239001)
- SCT Structure of **myocardium** of inferior surface of left ventricle(367598003)
- SCT Structure of **myocardium** of diaphragmatic region(72542009)
- SCT Structure of **myocardium** of atrium(17475005)
- SCT Structure of **myocardium** of apex of heart(47962008)

Pathophysiology

Pathophysiology:

Defining Strength:

Source:

Reference URL(optional):



# A proposal with NewChange status


[article](#) [edit with form](#) [edit](#) [history](#) [upload files](#)


## Proposal for ICD11 (I42.0) Dilated cardiomyopathy by Guoqian at 20090120210047

Proposal for: [Category:ICD11\\_\(I42.0\)\\_Dilated\\_cardiomyopathy](#)

[Meta](#) [Name & Textual Definition](#) [Definitional Characteristics](#) [References](#) [Factbox](#)

[Leave a comment ...](#)



[NewChange](#) 

[See Comments/References](#) [\[show\]](#)

**Curation Status:** NewChange

**Purpose of the proposal:** To improve compatibility within WHO Family of International Classifications

**Reason for change:** Testing

---

[Categories: ICD11 \(I42.0\) Dilated cardiomyopathy](#) | [Workflow ICD10 Proposal](#) | [Workflow CurationStatus NewChange](#)

# Multiple proposals in a category

category propose change propose child concept propose removal

Guoqian my talk my preferences my watchlist my contributions log out my workflow

## Category:ICD11 (I42.0) Dilated cardiomyopathy

Name & Textual Definition Definitonal Characteristics Inclusions & Exclusions **Proposals** Factbox

### Articles in category "ICD11 (I42.0) Dilated cardiomyopathy"

There are 11 articles in this category.

P	P cont.	P cont.
<ul style="list-style-type: none"><li>Proposal for ICD11 (I42.0) Dilated cardiomyopathy by Guoqian at 20080919190831</li><li>Proposal for ICD11 (I42.0) Dilated cardiomyopathy by Guoqian at 20081006142056</li><li>Proposal for ICD11 (I42.0) Dilated cardiomyopathy by Guoqian at 20081006142837</li></ul>	<ul style="list-style-type: none"><li>Proposal for ICD11 (I42.0) Dilated cardiomyopathy by Guoqian at 20090120210047</li><li>Proposal for ICD11 (I42.0) Dilated cardiomyopathy by LaceyHart at 20080819150345</li><li>Proposal for ICD11 (I42.0) Dilated cardiomyopathy by LexWikiAdmin at 20080816180823</li><li>Proposal for ICD11 (I42.0) Dilated cardiomyopathy by LexWikiAdmin at 20080818185057</li></ul>	<ul style="list-style-type: none"><li>Proposal for ICD11 (I42.0) Dilated cardiomyopathy by LexWikiAdmin at 20080908151849</li><li>Proposal for ICD11 (I42.0) Dilated cardiomyopathy by LexWikiAdmin at 20080911214205</li><li>Proposal for ICD11 (I42.0) Dilated cardiomyopathy by LexWikiAdmin at 20081023000341</li><li>Proposal for ICD11 (I42.0) Dilated cardiomyopathy by LexWikiAdmin at 20081023012523</li></ul>

### References

See ICD10xm Hierarchy [show]

Form: LexWiki ICD11 Form

### Supercategories

Category: ICD11 (I42) Cardiomyopathy

# My Workflow Management

 [Guoqian](#) [my talk](#) [my preferences](#) [my watchlist](#) [my contributions](#) [log out](#) [my workflow](#)

[special](#)

## My Workflow

### My Proposals (last editdate, proposal name, last editor)

#### My Proposals with Curation Status NewChange

[\[hide\]](#)

- 22:12, 3 March 2008: [Change Proposal by Guoqian at 20080303221233](#) .. [Guoqian](#)
- 22:15, 3 March 2008: [Change Proposal by Guoqian at 20080303221512](#) .. [Guoqian](#)
- 22:16, 3 March 2008: [Change Proposal by Guoqian at 20080303221613](#) .. [Guoqian](#)
- 22:18, 3 March 2008: [Change Proposal by Guoqian at 20080303221827](#) .. [Guoqian](#)
- 17:16, 26 March 2008: [Change Proposal by Guoqian at 20080326171500](#) .. [Guoqian](#)
- 18:41, 26 March 2008: [Change Proposal by Guoqian at 20080326184134](#) .. [Guoqian](#)
- 16:54, 3 April 2008: [Change Proposal by Guoqian at 20080403165411](#) .. [Guoqian](#)
- 15:21, 6 April 2008: [Change Proposal by Guoqian at 20080406152047](#) .. [Guoqian](#)
- 18:30, 6 April 2008: [Change Proposal by Guoqian at 20080328151610](#) .. [Guoqian](#)
- 18:35, 6 April 2008: [Change Proposal by Guoqian at 20080406183452](#) .. [Guoqian](#)
- 19:59, 6 April 2008: [Change Proposal by Guoqian at 20080406195843](#) .. [Guoqian](#)
- 14:36, 7 April 2008: [Change Proposal by Guoqian at 20080407143652](#) .. [Guoqian](#)
- 19:15, 19 September 2008: [Proposal for ICD11 \(I42.0\) Dilated cardiomyopathy by Guoqian at 20080919190831](#) .. [Guoqian](#)
- 14:26, 6 October 2008: [Proposal for ICD11 \(I42.0\) Dilated cardiomyopathy by Guoqian at 20081006142056](#) .. [Guoqian](#)
- 21:57, 20 January 2009: [Proposal for ICD11 \(I42.0\) Dilated cardiomyopathy by Guoqian at 20090120210047](#) .. [Guoqian](#)

#### My Proposals with Curation Status NewConcept

[\[show\]](#)

#### My Proposals with Curation Status NewRemoval

[\[show\]](#)

#### My Proposals with Curation Status ReadyToOpenDiscussion

[\[show\]](#)

#### My Proposals with Curation Status ReadyToClosedDiscussion

[\[show\]](#)

#### My Proposals with Curation Status Rejected

[\[show\]](#)

# Protégé/LexWiki Interface

Category:ICD10 Other leukaemias of specified cell type(C94) - LexWiki - Windows Internet Explorer

http://brndev.mayo.edu/lexwiki/index.php/Category:ICD10\_Other\_leukaemias\_of\_specified\_cell\_type%28C94%29

Associations

ICD10\_Excludes: Category ICD10 Plasma\_cell\_leukaemia(C90.1)  
ICD10\_Excludes: Category ICD10 Hairy\_cell\_leukaemia(C91.4)  
Parent: Category ICD10 Malignant\_neoplasms\_stated\_or\_presumed\_to\_be\_primary\_of\_lymphoid\_haematopoietic\_and\_related\_tissue(C81-C96)

ICD10xx Associations

Mappings	Association Name	Association Value
Category ICD10AM Other leukaemias of specified cell type(C94)	ICD10AM_Excludes	Category ICD10AM Hairy_cell_leukaemia(C91.4)
Category ICD10AM Other leukaemias of specified cell type(C94)	ICD10AM_Excludes	Category ICD10AM Plasma_cell_leukaemia(C90.1)
Category ICD10CM Other leukaemias of specified cell type(C94)	ICD10CM_Excludes1	Category ICD10CM Hairy_cell_leukaemia(C91.4)
Category ICD10CM Other leukaemias of specified cell type(C94)	ICD10CM_Excludes1	Category ICD10CM Personal_history_of_leukemia(285.6)
Category ICD10CM Other leukaemias of specified cell type(C94)	ICD10CM_Excludes1	Category ICD10CM Plasma_cell_leukemia(C90.1)

Association Graph

```
graph LR; A[Category ICD10_Other_leukaemias_of_specified_cell_type(C94)] -- Excludes --> B[Category ICD10_Plasma_cell_leukaemia(C90.1)]; A -- Excludes --> C[Category ICD10_Hairy_cell_leukaemia(C91.4)];
```

Form LexWiki ICD10 Form

Facts about ICD10 Other leukaemias of specified cell type(C94) @

- Has default form Form:LexWiki ICD10 Form - %s
- ICD10 Excludes Category ICD10 Plasma cell leukaemia(C90.1) - %s, and Category ICD10 Hairy cell leukaemia(C91.4) - %s
- ICD10 Excludes leukaemic reticulendotheliosis (C91.4) - %s, and plasma cell leukaemia (C90.1) - %s

ICD10who Protégé 3.3.1 (file:///C:/whoproject/lao\_example/icd10who.ppr, Protégé Files (.pont-and-pias))

CLASS BROWSER

For Project: icd10who

Class hierarchy

- ICD10 Diseases of the ear and mastoid process(CHAPTER 06)
- ICD10 Congenital malformations, deformations and chromosomal abnormalities(CHAPTER 07)
- ICD10 Neoplasms(CHAPTER 02) <C>
- ICD10 Malignant neoplasms of lymphoid, haematopoietic and related tissue(C81-C96)
  - ICD10 Diffuse non-Hodgkin's lymphoma(C82)
  - ICD10 Leukemia or unspecified cell type(C90-C95)
    - ICD10 Other and unspecified types of non-Hodgkin's lymphoma(C85)
    - ICD10 Lymphoid leukaemia(C91)
    - ICD10 Hodgkin's disease(C81)
    - ICD10 Monocytic leukaemia(C92)
    - ICD10 Malignant immunoproliferative diseases(C88)
    - ICD10 Other leukaemias of specified cell type(C94) <C>
    - ICD10 Peripheral and cutaneous T-cell lymphomas(C94)
    - ICD10 Other and unspecified malignant neoplasms of lymphoid, haematopoietic or related tissue(C81-C96)
    - ICD10 Multiple myeloma and malignant plasma cell neoplasm(C90)
    - ICD10 Myeloid leukaemia(C92)
    - ICD10 follicular (nodular) non-Hodgkin's lymphoma(C82)
    - ICD10 Neoplasms of uncertain or unknown behaviour(D37-D49)
    - ICD10 Malignant neoplasms of ill-defined, secondary and unspecified sites(C76-C80)
    - ICD10 Malignant neoplasms of digestive organs(C15-C26)

Super classes

- ICD10 Malignant neoplasms of lymphoid, haematopoietic and related tissue(C81-C96)

Annotations

Annotations on ICD10 Other leukaemias of specified cell type(C94)

- Draft\_of\_ICD10\_Other\_leukaemias\_of\_specified\_cell\_type-2834-29\_by\_LexWikiAdmin\_at\_20071003195345
- Draft\_of\_ICD10\_Other\_leukaemias\_of\_specified\_cell\_type-2834-29\_by\_LexWikiAdmin\_at\_20070929214238
- Draft\_of\_ICD10\_Other\_leukaemias\_of\_specified\_cell\_type-2834-29\_by\_LexWikiAdmin\_at\_20071011202810
- Draft\_of\_ICD10\_Other\_leukaemias\_of\_specified\_cell\_type-2834-29\_by\_LexWikiAdmin\_at\_20071015015514
- Draft\_of\_ICD10\_Other\_leukaemias\_of\_specified\_cell\_type-2834-29\_by\_LexWikiAdmin\_at\_20071003194813
- Draft\_of\_ICD10\_Other\_leukaemias\_of\_specified\_cell\_type-2834-29\_by\_LexWikiAdmin\_at\_2007101205437
- Draft\_of\_ICD10\_Other\_leukaemias\_of\_specified\_cell\_type-2834-29\_by\_LexWikiAdmin\_at\_20071016143042
- Draft\_of\_ICD10\_Other\_leukaemias\_of\_specified\_cell\_type-2834-29\_by\_LexWikiAdmin\_at\_20071015014403

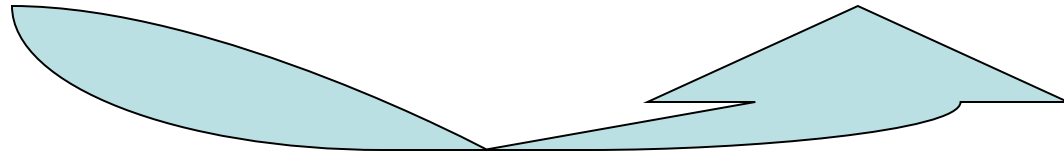
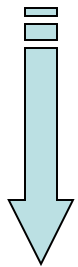
Annotation body

Description

Draft\_of\_ICD10\_Other\_leukaemias\_of\_specified\_cell\_type-2834-29\_by\_LexWikiAdmin\_at\_20071003195345

Author

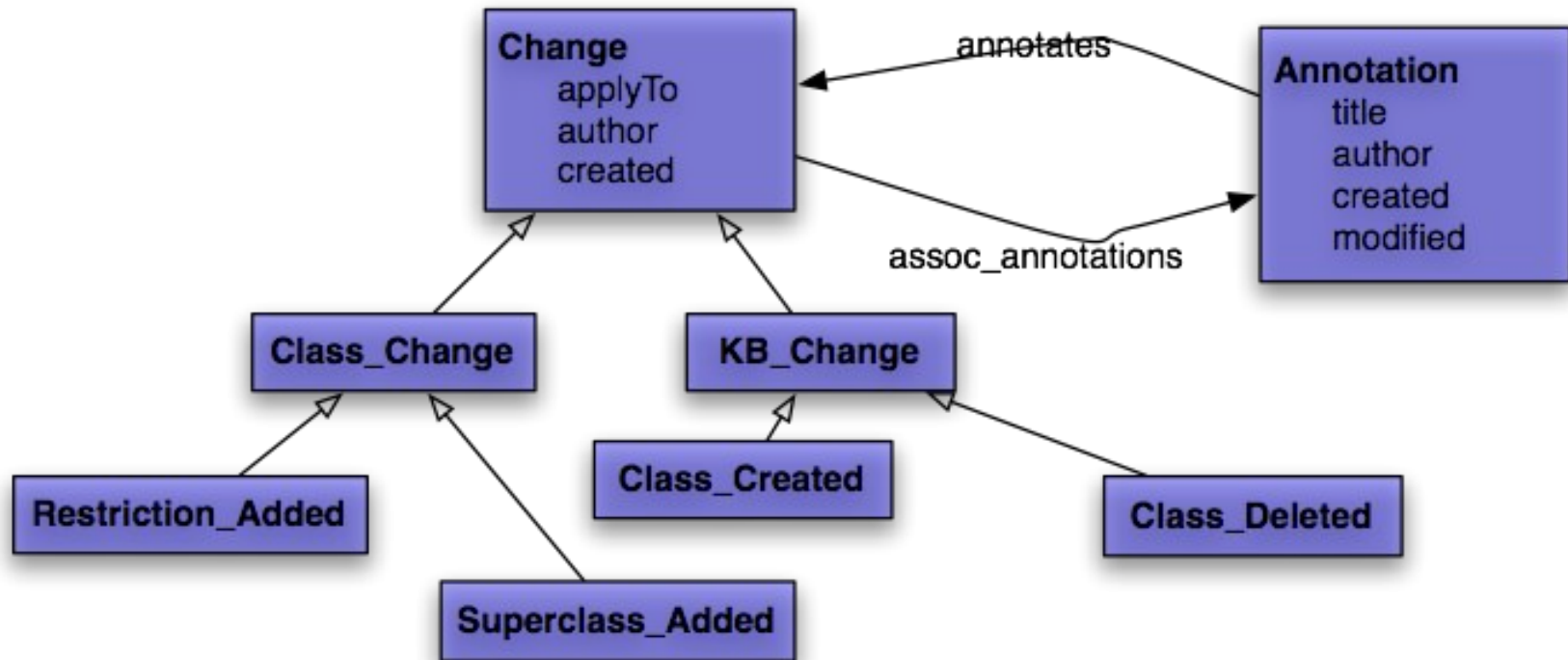
LexWikiAdmin



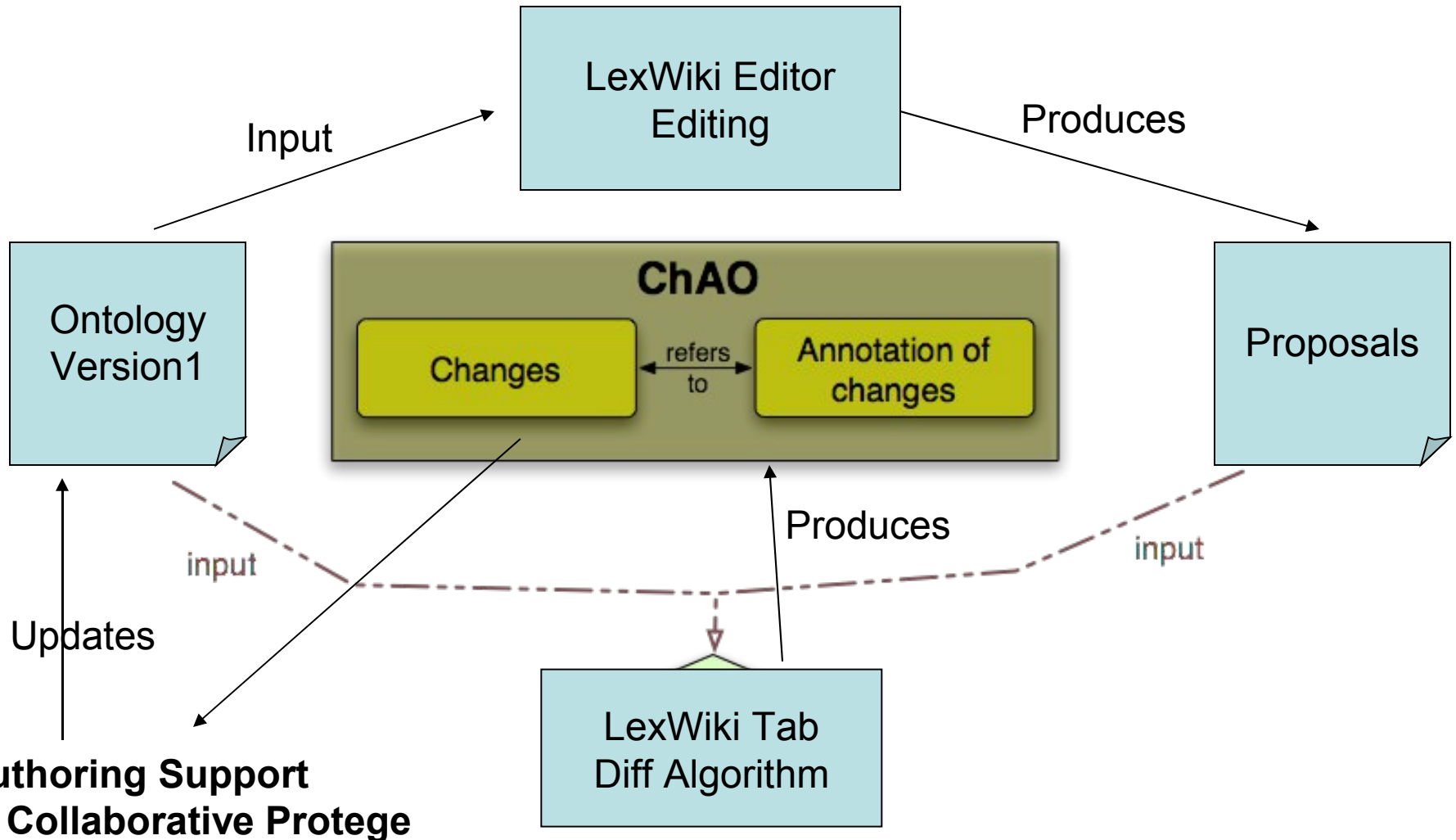
Export/Load Change Set  
Into Collaborative Protege

Portable ChangeSet  
In RDF format

# ChAO: Change and Annotations Ontology



# Generating ChAO Instances



# Authoring Support in Collaborative Protégé

The screenshot displays the Protégé 3.3.1 interface. The title bar reads "icd10who Protégé 3.3.1 (file:C:\whoproject\ao\_example\icd10who.ppr, Protégé Files (.pont and .pins))". The menu bar includes File, Edit, Project, Window, Tools, and Help. The toolbar contains icons for file operations and editing. The main workspace is divided into several panes:

- CLASS BROWSER:** Shows a class hierarchy for the project "icd10who". The "Class Hierarchy" pane lists various classes, with "ICD10 Other leukaemias of specified cell type(C94)" selected. The "Superclasses" pane shows "ICD10 Malignant neoplasms of lymphoid, haematopoietic and related tissue(C81-C96)".
- Annotations:** A panel on the right showing a list of changes for the selected class. The filter is set to "By author...". The list contains several entries, each starting with "Property Changed at:Draft\_of\_ICD10\_Other\_leukaemias\_of\_specified\_cell\_type-28C94-29\_by\_LexWkiAdmin\_at\_20071003195345".
- Annotation body:** A section below the list showing the context and apply-to information for a selected annotation. The context is "Property Changed at:Draft\_of\_ICD10\_Other\_leukaemias\_of\_specified\_cell\_type-28C94-29\_by\_LexWkiAdmin\_at\_20071003195345" and the apply-to is "ICD10 Other leukaemias of specified cell type(C94)".

The text "Instances of Changes" is overlaid in green on the right side of the screenshot.

# Challenges & Future Directions

- Usability
- Change tracking
- Workflow
- Formal backend
  - LexGrid model
  - OWL model
  - RDF Triplestore
- LexWiki installer



# Useful Links

- LexWiki demo site:
  - [http://informatics.mayo.edu/vkcdemo/lexwiki1/index.php/Main\\_Page](http://informatics.mayo.edu/vkcdemo/lexwiki1/index.php/Main_Page)
- NCI caBIG Vocabulary Knowledge Center:
  - [https://cabig-kc.nci.nih.gov/Vocab/KC/index.php/Main\\_Page](https://cabig-kc.nci.nih.gov/Vocab/KC/index.php/Main_Page)
  - Forum
  - Tooling documentation
    - LexGrid
    - LexWiki
    - ...

# Tool Collaboration

## Open-source distributed authoring

- Mayo Clinic, Division of Biomedical Informatics
- WHO – World Health Organization
  - ICD11 editing task
- NCI – National Cancer Institute
  - caBIG – Bioinformatics Grid
  - NCI Thesaurus development task
- Stanford – Biomedical Informatics Research
  - Developers of Protégé and Collaborative Protégé
  - National Center for Biomedical Ontologies

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