

# NLM Standards Related Activities

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National Library of Medicine

HL7 Working Group Meeting  
San Antonio, TX  
January 14, 2008



DEPARTMENT OF HEALTH  
AND HUMAN SERVICES

# Presidential Executive Order

April 27, 2004

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With goal of ubiquitous electronic health records and a national health information infrastructure in 10 years:

Established new **National Health Information Technology Coordinator** in HHS with responsibility for strategic plan to:

- “ (i) Advance the development, adoption, and implementation of *health care information technology standards* nationally through collaboration among public and private interests, and *consistent with current efforts to set health information technology standards for use by the Federal Government*;
- (ii) ....”



# HHS Health IT Strategic Framework

*July 21, 2004*


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- “A key component of a national health information network is the development of technically sound and robustly specified interoperability standards for diffusion into practice.”

# HHS Health IT

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## Health Information Technology



- HIT Home
- American Health Information Community
- AHIC Workgroups
- Office of the National Coordinator (ONC)
- Health IT Certification
- Data & Technical Standards
- Nationwide Health Information Network
- Use Cases
- Privacy & Security
- Initiatives
- Contracts
- News Room
- Frequent Questions
- Acronyms

### Health Information Technology Home

#### Health Information Technology

Health information technology (Health IT) allows comprehensive management of medical information and its secure exchange between health care consumers and providers. Broad use of health IT will:

- Improve health care quality;
- Prevent medical errors;
- Reduce health care costs;
- Increase administrative efficiencies;
- Decrease paperwork; and
- Expand access to affordable care.

Interoperable health IT will improve individual patient care, but it will also bring many public health benefits including:

- Early detection of infectious disease outbreaks around the country;
- Improved tracking of chronic disease management; and
- Evaluation of health care based on value enabled by the collection of de-identified price and quality information that can be compared.

#### Making Health Information Technology Personal

Health information technologies can be tools that help individuals maintain their health through better management of their health information. Health IT will help consumers gather all of their health information in one place so they can thoroughly understand it and share it securely with their health care providers so they get the care that best fits their individual needs.

Health IT can help to improve public health one individual at a time by building partnerships between health care

#### National Health IT Summit: A Washington - Texas Dialogue

April 15 & 16, 2008  
Houston, Texas

**Register Now:**  
<http://www.nhit-shis.org/>

#### Upcoming Events

##### HIT Terms Project Public Forum

January 16, 2008  
9am - 12pm  
National Rehabilitation Hospital -  
Auditorium  
102 Irving Street NW  
Washington, DC  
[More >>](#)

**AHIC**  
Washington, DC  
January 22, 2008  
[More >>](#)

[All Upcoming Events items](#)

#### State Alliance for e-Health Taskforces

For information on each of the 3  
taskforces, including  
recommendations and meeting

[www.hhs.gov/healthit](http://www.hhs.gov/healthit)



# Strategy for Achieving U.S. Health Data Standards


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- Establish mechanism for designating U.S. Standards
- Pick best available as starting point
- Support development, maintenance, and low/no cost distribution – NLM leadership and ongoing commitment
- Coordinate development of selected standards to achieve non-overlapping, interlocking set
- Broaden participation in standards development
- Promote use and improvement

# Use Cases

**HHS.gov** Improving the health, safety and well-being of America

**Health Information Technology**



**HIT Home**

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**Health IT Certification**

**Data & Technical Standards**

**Nationwide Health Information Network**

**Use Cases**

**Privacy & Security**

**Initiatives**

**Contracts**

**News Room**

**Frequent Questions**

**Acronyms**

## AHIC Use Cases

E-mail me when this page is updated

**In Development**

*Draft Detailed Use Cases to be published for Public Feedback in Mid January 2008*

- [AHIC 2008 "Prototype" Use Case Stakeholder Presentation \(PPT\)](#) (550KB)
- [Remote Monitoring](#)
- [Patient - Provider Secure Messaging](#) (formerly Remote Consultation)
- [Personalized Healthcare](#)
- [Consultation and Transfers of Care](#)
- [Public Health Case Reporting](#)
- [Immunizations & Response Management](#)

**2007 Use Cases**

- [Emergency Responder - Electronic Health Record \(PDF\)](#) (377KB)
- [Consumer Empowerment: Consumer Access to Clinical Information](#)
- [Medication Management](#)
- [Quality](#)

**2006 Use Cases**

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For information on each of the 3 taskforces, including recommendations and meeting

[www.hhs.gov/healthit/usecases](http://www.hhs.gov/healthit/usecases)

# Healthcare Information Technology Standards Panel (HITSP)

**ANSI**  
Standards Activities

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**Standards Activities**  
Overview  
International Policy Papers and Charts  
U.S. Standards Strategy  
Public Review and Comment  
Standards Action  
ANSI Procedural Revisions  
Accreditation Actions  
Domestic Programs (American National Standards)  
Overview  
Procedures, Guides and Forms  
Guidance Documents  
PINS & BSR8/108 WEB Data Submittal Forms  
Standards Developers  
Accreditation Requirements  
Appeals Requirements  
Audit Requirements  
Approved American National Standard Mark  
Governance Committees  
International and Regional Programs - General and Policy  
Overview  
Governance Committees  
USNC/IEC Programs  
Overview  
Governance Committees  
History

**Healthcare Information Technology Standards Panel**



- Organizational Structure
  - Technical Committees
- Membership
- News Items
- HITSP Member Announcements
- Meeting Calendar
- Document Library
- Membership in ANSI
- Staff Contacts
- Frequently Asked Questions

**John Halamka's blog explaining his personal health records**  
**John Halamka's Continuity of Care Document**  
**John Halamka's non-interoperable Electronic Health Record**

**HITSP Documents for Public Comment HERE**  
If you would like to access the IS07 - Medication Management Interoperability Specification and the T31 - Document Reliable Interchange Transaction which are open for public comment until January 11, 2007, start here. For instructions on navigating these documents and accessing the comment tracking system, please start with the HITSP Release Note 20071207 Documents for Public Comment file.

**HITSP Comment Tracking System HERE**  
you have all the documents you need and are ready to submit comments, you may start your registration or comment entry here. If you have previously entered comments, you may also check their status and disposition.

**HITSP Security and Privacy Documents HERE**

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are our business

[www.ansi.org/hitsp/](http://www.ansi.org/hitsp/)



# NLM's Role

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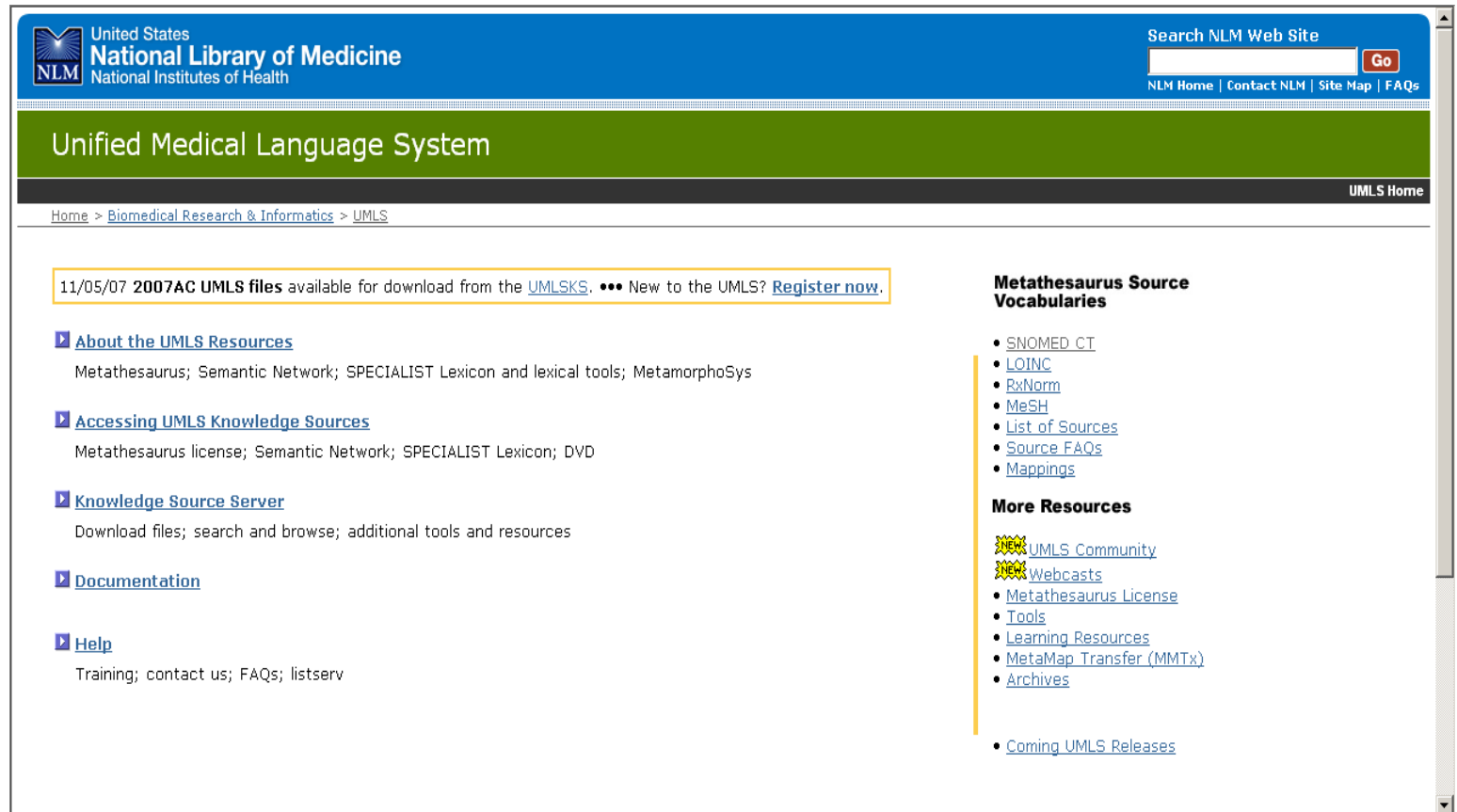
# NLM-led Support for Development and Maintenance

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- **1999** – LOINC (lab tests/instrument observations) - contract support
- **2002** – RxNorm (clinical drugs) - direct development
- **2003** – SNOMED CT contract & license for U.S.-wide use (*as distributed by NLM in UMLS*)

# Unified Medical Language System

## UMLS



The screenshot shows the UMLS website homepage. At the top left is the NLM logo and text: "United States National Library of Medicine National Institutes of Health". At the top right is a search bar labeled "Search NLM Web Site" with a "Go" button and links for "NLM Home", "Contact NLM", "Site Map", and "FAQs". Below this is a green banner with "Unified Medical Language System" and a "UMLS Home" link. A breadcrumb trail reads "Home > Biomedical Research & Informatics > UMLS". A yellow-bordered box contains the text: "11/05/07 2007AC UMLS files available for download from the [UMLSKS](#). ••• New to the UMLS? [Register now](#)." Below this are several sections with blue arrow icons: "About the UMLS Resources" (Metathesaurus; Semantic Network; SPECIALIST Lexicon and lexical tools; MetamorphoSys), "Accessing UMLS Knowledge Sources" (Metathesaurus license; Semantic Network; SPECIALIST Lexicon; DVD), "Knowledge Source Server" (Download files; search and browse; additional tools and resources), "Documentation", and "Help" (Training; contact us; FAQs; listserv). On the right side, there are two sections: "Metathesaurus Source Vocabularies" with links for SNOMED CT, LOINC, RxNorm, MeSH, List of Sources, Source FAQs, and Mappings; and "More Resources" with links for UMLS Community, Webcasts, Metathesaurus License, Tools, Learning Resources, MetaMap Transfer (MMTx), Archives, and Coming UMLS Releases.

[umlsinfo.nlm.nih.gov](http://umlsinfo.nlm.nih.gov)



# Letter from HHS Secretary to NCVHS

Sept. 2004

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- “As you requested ..., NLM to serve as the central coordinating body within HHS for PMRI [Patient Medical Record Information] terminologies. ... several ... mapping recommendations currently are being implemented by the NLM.”



## Coordination means:

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- Uniform distribution of designated standard vocabularies through the UMLS Metathesaurus
- Reducing peripheral overlap and establishing explicit relationships between standard clinical vocabularies (e.g., SNOMED, LOINC, RxNorm)
- Aligning standard clinical vocabularies with standard record and message formats
- Mapping between standard clinical vocabularies and administrative code sets and/or other important vocabularies

# NLM Long Range Plan for 2006-2016

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## **3.2 Promote Development of “Next Generation” Electronic Health Records**

- Continue and enhance current standards efforts:
  - Develop, support, license, disseminate vocabulary standards via UMLS
  - Develop subsets, mappings, and other tools in collaboration with actual clinical systems
  - Contribute to health information technology policy development
- Expand research and development to define and develop more advanced electronic health records

# Health IT at NLM

The screenshot shows the NLM website header with the logo and navigation links. The main content area features a title, a printer-friendly version link, a summary box, and a list of news items. A right sidebar contains related sites and NIH initiatives.

**United States National Library of Medicine National Institutes of Health**

Search NLM Web Site  **Go**

NLM Home | Contact NLM | Site Map | FAQs

Home > Health Information Technology

## Health Information Technology and Health Data Standards at NLM

[Printer-friendly Version](#)

**NLM is the central coordinating body for clinical terminology standards within the Department of Health and Human Services (HHS). NLM works closely with the Office of the National Coordinator for Health Information Technology (ONC) to ensure NLM's efforts are aligned with the goal of the President and HHS Secretary for the nationwide implementation of an interoperable health information technology infrastructure to improve the quality and efficiency of health care.**

### Health Data Standards

[11/23/07 IHTSDO Appoints New CEO, Encourages Participation in Working Groups](#)

NLM supports the development, enhancement, and distribution of clinically specific vocabularies to facilitate the exchange of clinical data and improve retrieval of health information.

- Clinical Vocabularies supported, licensed, or developed by NLM:
  - [SNOMED CT](#) | [LOINC](#) | [RxNorm](#)
- Uniform distribution mechanism for HIPAA and clinical vocabulary standards through the [UMLS Metathesaurus](#)
- [UMLS Enhanced VA/KP Problem List Subset of SNOMED](#)

NLM distributes FDA approved Structured Product Labels linked to RxNorm and related medication information:

- [DailyMed](#)

NLM coordinates efforts to develop [mappings](#) between HIPAA code sets and standard clinical vocabularies.

- SNOMED CT to ICD-9-CM | SNOMED CT to CPT | [LOINC to CPT](#)

NLM promotes harmonization between standards.

- [Contract with HL7](#) to align HL7 message standard with CHI standard vocabularies and create implementation guides for

#### Related Sites

- [HealthIT \(U.S. Government Health Information Technology Web Site\)](#)
- [Office of the National Coordinator for Health Information Technology \(ONC\)](#)
- [USHIK \(United States Health Information Knowledgebase\)](#)

#### NIH Initiatives

- [Clinical and Translational Science Awards](#)
- [CaBIG \(Cancer Biomedical Informatics Grid\)](#)

#### NLM Participation in Standards Development

[www.nlm.nih.gov/healthit.html](http://www.nlm.nih.gov/healthit.html)



# Specific Projects

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- **UMLS**
- SNOMED CT
- LOINC
- RxNorm
- DailyMed
- Mapping Projects
- Harmonization between standards

# 2007AA UMLS Metathesaurus (Jan 2007)

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- ~1,373,000 concepts
- ~4,967,000 “terms” (Eye, Eyes, eye = 1)
- ~5,546,000 unique “strings” (Eye, Eyes, eye = 3)
- ~6,773,000 “atoms” or source vocabulary strings (Eye [from MeSH], Eye [from SNOMED CT] = 2)
- 139 source **vocabularies** (121 “families”)
- 17 different languages
  
- *Multi-purpose – MUST be customized for any specific purpose*




# UMLS® – Moved from a Research Project to a Production System

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- Included:
  - Transitioned from research branch (Lister Hill Center) to production branch (Office of Computer and Communications Systems and Library Operations)
  - Migrated to new computer hardware and software
  - Adding new staff to support improvements to documentation, training, QA, and customer support
  - Adding new tools to enable users to easily create and view custom subsets
- Primarily affects production of the Metathesaurus release files.
- Research branch still heavily involved in continued development

# UMLS Community



United States  
**National Library of Medicine**  
National Institutes of Health

Search NLM Web Site

[NLM Home](#) | [Contact NLM](#) | [Site Map](#) | [FAQs](#)

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## Unified Medical Language System

[UMLS Home](#)

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[Home](#) > [Biomedical Research & Informatics](#) > [UMLS](#)

### UMLS Community

#### User contributions

- As the UMLS community continues to grow, NLM recognizes the valuable contributions of our users as they integrate and customize the UMLS into their own environments. We will try, to the best of our resources, to share these contributions with the rest of the community in a public manner as we learn about and experiment with them as well.
- Contact information for the creators of these tools is provided within their posted files.
- Please be aware that these contributions cannot be guaranteed to function as-is on all platforms, and certain adjustments may be necessary to fit your local environment.
- Please understand that we must prioritize listing these contributions in accordance with the needs of the majority of our users.

**Disclaimer:** Neither the author(s) nor the National Library of Medicine (NLM) makes any warranty, expressed or implied, or assumes any liability or responsibility for the use of this information, scripts, or software described here. It is the sole responsibility of the end-user to verify compatibility, safety, and functionality of any third-party contribution before attempting to incorporate it into a production-level environment. NLM shall not be held responsible for any claims of data loss, system damage, or other unexpected outcomes resulting from incorporating these contributions into real-world applications. The posting of these contributions does not constitute endorsement by the NLM.

| Contribution                                      | Author(s)     | Purpose  |
|---|---------------|--|
| <a href="#">PostgreSQL load script</a>            | Steve Bedrick | Loads Metathesaurus .RRF files into a PostgreSQL database                  |
| <a href="#">MetamorphoSys Batch Run Script</a>    | Brian Carlsen | Allows command-line execution of customizable MetamorphoSys configurations |
| <a href="#">MetamorphoSys Batch MRCXT Builder</a> | Brian Carlsen | Allows command-line execution of customizable MRCXT Builder configurations |
| <a href="#">Apache Derby UMLS Loader</a>          | Eric Mays     | Apache Derby database schema generation and loading utility                |

**Last reviewed:** 10 January 2008  
**Last updated:** 10 January 2008

# UMLS Webcasts

## Welcome to UMLS® Webcasts

- Goal

The UMLS Webcasts are intended to give users the opportunity to gain in-depth knowledge on the diverse products that make up the UMLS. The format of each Webcast is a 20-30 minute presentation, followed by a question-and-answer session where users will be able to ask questions relevant to the topic at hand.

- Interface

NLM uses Adobe Connect® for Webcasting. All that is required is the Adobe Flash Player plug-in for your web browser. This comes standard with most browser installations, but can be downloaded for free if necessary at <http://www.adobe.com/>. As an attendee, you will be able to ask questions via chat window after the presentation. Captioning will be provided.

- Attendance

You can sign up for a UMLS Webcast [here](#). You will receive an email the day before the Webcast containing the URL to which you must direct your browser in order to attend. At the time of the meeting, please enter the meeting room as 'Guest'.

### Future Topics:

-RxNorm

-The Semantic Network



[Sign up for UMLS Webcasts!](#)

### Upcoming UMLS Webcasts

\*All Webcasts will begin at 2pm EST unless otherwise indicated

\*Attendance is limited for each Webcast.

[Subscribe to the RSS of the schedule =>](#) 

| Date               | Topic  | Presenter                        |
|--------------------|--|----------------------------------|
| 26 October, 2007:  | <a href="#">Archive:Using the Metathesaurus in a Database</a><br>PowerPoint only <a href="#">here</a>    | Brian Carlsen, Suresh Srinivasan |
| 30 November, 2007: | <a href="#">Archive:Inter-terminology mapping and the UMLS</a><br>PowerPoint only <a href="#">here</a>   | Dr. Kin Wah Fung, Vivian Auld    |
| 14 December, 2007: | <a href="#">Archive:Getting started with the 2007AC UMLS DVD</a><br>PowerPoint only <a href="#">here</a> | Rachel Kleinsorge                |
| 11 January, 2008:  | <a href="#">Archive:The New Webservices Interface to the UMLSKS</a>                                      | Anantha Bangalore, Karen Thorn   |



# New Web Services Interface to the UMLSKS

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- January/February 2008
  - New backend system released
  - Front end web interface released
  - XSL-based user interface running concurrently
- March 2008
  - Downloadable library Alpha release
- April 2008
  - Web interface redeployment with new features
    - Building of user defined web pages



# UMLS – CORE Project

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- CORE = **C**linical **O**bservations **R**ecordings and **E**ncoding
- To identify a CORE subset of the UMLS to support consistent high level encoding of clinical information
- Dr. Kin Wah Fung is the project lead



# Specific Projects

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- UMLS
- **SNOMED CT**
- LOINC
- RxNorm
- DailyMed
- Mapping Projects
- Harmonization between standards

# 2003- NLM/CAP\* License and Contract

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- U.S-wide license for the use of SNOMED CT:
  - Perpetual rights to the last version received under the contract
  - Ongoing updates to the English and Spanish versions for 5 years (follow-on contracts likely)
  - Free distribution to U.S. users via NLM's Unified Medical Language System (UMLS)
    - International use requires separate license from CAP
  - Terms of agreement determined with extensive input/advice from HHS agencies, VA, DOD

**\*College of American Pathologists**



April 26, 2007:

## Change in ownership announced

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- International Health Terminology Standards Development Organisation (IHTSDO)
  - Charter members from 9 countries:
    - Australia, Canada, Denmark, Lithuania, Netherlands, New Zealand, Sweden, UK, USA
  - Each member country represented by one entity
    - NLM – the initial entity for USA



# International Health Terminology Standards Development Organisation (IHTSDO)



The screenshot shows the IHTSDO website homepage. At the top, the organization's name is displayed in blue text next to a logo consisting of a blue circle with a white arrow and several small blue and red squares. Below the name is a navigation menu with links for News, Our Standards, About us, Contact, Calendar, Projects, and Members. A search bar with 'Search Print FAQ' options is located in the top right. The main content area features a 'Welcome to the IHTSDO Website' section with a row of eight international flags on poles. Below the flags is a news item titled 'Ownership of SHOMED CT® transfers to IHTSDO®' with a brief description. A 'News' section follows, featuring an article about a transition week in Chicago. On the right side, there is a 'SHOMED CT®' section with a description and a photo of a man in a suit, and an 'Our new Domain' section with text about the organization's new office location.

INTERNATIONAL HEALTH TERMINOLOGY  
STANDARDS DEVELOPMENT ORGANISATION

News Our Standards About us Contact Calendar Projects Members

Search Print FAQ

### Welcome to the IHTSDO Website



**Ownership of SHOMED CT® transfers to IHTSDO®**  
Welcome to IHTSDO®, the International Health Terminology Standards Development Organisation.

### News

**Transition week in Chicago May 22 - 26 2007**  
In this week the CAP and IHTSDO have met to assist the transition of both projects and knowledge[[more](#)]

20.06.07

**SHOMED CT®**  
The comprehensive health care Terminology. Knowledge share in health care.



**Our new Domain**  
The IHTSDO® has moved in at the IT-University of Copenhagen. The office is at the 5th floor of the panoptic building, designed by the Danish

[www.ihtsdo.org/](http://www.ihtsdo.org/)

# What Will Be Different for U.S.?

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- Annual fee NLM is paying **may** decrease over time
- SNOMED CT and its documentation now available in native format from NLM
  - in addition to UMLS format
- Better international distribution rights for US users
- Good prospects for:
  - More transparent governance, priority setting
  - More efficient updating
  - International collaboration on subsets, tools, etc.
  - More commercial products
- NLM developing plan for improving procedures so NLM can effectively represent the needs of U.S. users of SNOMED CT to the IHTSDO.

[www.nlm.nih.gov/snomed](http://www.nlm.nih.gov/snomed)



# Specific Projects

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- UMLS
- SNOMED CT
- **LOINC**
- RxNorm
- DailyMed
- Mapping Projects
- Harmonization between standards



# LOINC

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- NLM provides support for the ongoing maintenance and distribution of LOINC via contract mechanism
- Current contract will expire this Spring
- New contract will be put in place



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# RxNorm

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- 2007 Plans:
  - Continue improving coverage of drug delivery/dispensing devices and multi-vitamins within RxNorm
  - Expand RxNorm to cover over-the-counter medications based on information supplied by selected sources
- Webcast scheduled for January 25, 2008
- More information on Web site:  
[www.nlm.nih.gov/research/umls/rxnorm/index.html](http://www.nlm.nih.gov/research/umls/rxnorm/index.html)



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# DailyMed

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- Website ([dailymed.nlm.nih.gov](http://dailymed.nlm.nih.gov)) designed to provide high quality information about marketed drugs
- Uses the Structured Product Label (SPL) from the FDA
- Note: DailyMed information intended for prescribers and dispensers, not for patients.
  - Information for Patients section is designed to tell prescribers how to talk to their patients about the drug.





# DailyMed

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- Site went live in November 2005
- Currently contains 3532 labels
- Expect to have a complete set (~4,500) by the end of the year
- Will establish links to the published literature, [ClinicalTrials.gov](http://ClinicalTrials.gov), and other relevant sources for each drug listed



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# NLM's basic mapping project assumptions

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- Mappings are sets of relationships of varying complexity established between two vocabularies in order to allow automated translation or connection between them.
  - More specific concepts can generally be mapped accurately to more general concepts.
  - Mappings cannot be used to add specificity to information that was captured at a more generic level
- Participants in the creation of the map must include:
  - Producers of the two vocabularies being mapped
    - The creation of maps is likely to suggest ways to improve the vocabularies
  - Prospective users and recipients of the map (e.g., health care providers, payers) as testers and validators

## NLM's basic mapping project assumptions (2)

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- Mappings will be distributed in the UMLS (not exclusively); use will be governed by terms applicable to both ends
- Mapping is still an R & D problem - it requires an iterative process to build highly functional maps. Alignment of update schedules is critical.

Complete list of NLM's Basic Mapping Project Assumptions available at:

[www.nlm.nih.gov/research/umls/mapping\\_projects/mapping\\_assumptions.html](http://www.nlm.nih.gov/research/umls/mapping_projects/mapping_assumptions.html)



# Mapping Projects Underway

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- LOINC → CPT
- SNOMED CT → CPT
- SNOMED CT → ICD-9-CM
- SNOMED CT → MeSH

Note – See November 30, 2007 webcast for details on current mapping projects



# Mapping Projects Under Discussion

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- SNOMED CT → “other” vocabularies:
  - ICD-10-CM
  - Medical Dictionary for Regulatory Affairs (MedDRA)
  - International Classification of Functioning and Disability (ICF)
  - International Classification of Primary Care (ICPC)
  - Medcin



# Specific Projects

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- UMLS
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# Harmonization Efforts NLM Coordinating

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- SNOMED CT and LOINC
  - NLM facilitating meetings between IHTSDO and Regenstrief
  - Initial meetings are encouraging
- SNOMED CT and RxNorm
  - International solution will be developed for representing drug information
  - RxNorm just one piece of the puzzle



# NLM- HL7 Contract Arrangement

Sept. 2004

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- Align HL7 message standard with CHI standard vocabularies (*NLM-initiated*)
  - Specify which subsets of standard vocabularies are valid for particular message segments
  - Replace HL7-maintained lists of coded values with subsets of standard vocabularies, where feasible
  - Project wraps up during August 2008 HL7 Working Group Meeting
  
- Create implementation guide(s) for transmitting an entire Electronic Health Record between systems (*on behalf of HHS*)
  - Project wrapped up during May 2007 Working Group Meeting

# Find Out More



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National Institutes of Health



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- ▶ Online Exhibitions & Digital Projects

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## On Exhibit at NLM



**Visible Proofs: Forensic Views of the Body**  
February 16, 2006 - February 16, 2008

## Director's Comments



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## Current Health News

- [Chickenpox Vaccine Booster Shot a Good Idea](#) (03/15/07)
- [Weekend Heart Attacks Can Be Deadlier](#) (03/15/07)
- [FDA Requests Label Change for All Sleep Disorder Drug Products](#) (03/15/07)
- [More Health News](#)

## NLM News and Press Releases

- [REMM: Radiation Event Medical Management](#) (03/15/07)
- [NLM Convenes Symposium for Science Students](#) (03/01/07)
- [New Exhibition at NLM -- In Motion: The African American Migration Experience](#) (02/08/07)
- [Papers of Rosalind Franklin Added to the National Library of Medicine's Profiles in Science Website](#) (press announcement) (02/06/07)

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

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Databases and Resources



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**PubMed**®

Biomedical journal literature from MEDLINE/PubMed



VISIT SITE

ESPAÑOL

**MedlinePlus**®

Health and drug information for patients, family and friends



VISIT SITE

**Tox Town**

Interactive guide to common toxic chemicals, your health, and the environment



VISIT SITE

**ClinicalTrials.gov**

Drug and Treatment Studies

## Health Information Technology at NLM

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NLM is the central coordinating body for clinical terminology standards within the Department of Health and Human Services (HHS). NLM works closely with the Office of the National Coordinator for Health Information Technology (ONC) to ensure NLM's efforts are aligned with the goal of the President and HHS Secretary for the nationwide implementation of an interoperable health information technology infrastructure to improve the quality and efficiency of health care.

### Health Data Standards

NLM supports the development, enhancement, and distribution of clinically specific vocabularies to facilitate the exchange of clinical data and improve retrieval of health information.

- Clinical Vocabularies supported, licensed, or developed by NLM:  
[SNOMED CT](#) | [LOINC](#) | [RxNorm](#)
- Uniform distribution mechanism for HIPAA and clinical vocabulary standards through the [UMLS Metathesaurus](#)
- [UMLS Enhanced VA/KP Problem List Subset of SNOMED](#) **NEW**

NLM coordinates efforts to develop [mappings](#) between HIPAA code sets and standard clinical vocabularies.

- SNOMED CT to ICD-9-CM | SNOMED CT to CPT | [LOINC to CPT](#)

NLM promotes harmonization between standards.

- [Contract with HL7](#) to align HL7 message standard with CHI standard vocabularies and create implementation guides for exchange of entire EHRs.

### System Development Tools

- [UMLS Resources](#)
- [Language and Knowledge Processing](#)
- [Image Processing](#)

### Grants and Funding

### Education and Training

- [Funded Support for Academic Training in Biomedical Informatics & Bioinformatics](#) - Formal programs and individual fellowships are offered to assist medical informaticians in pursuit of a degree.
- [Medical Informatics Training Program](#) - Support for visiting scientists and students to participate in research at the Lister Hill National Center for Biomedical Communications. [Medical Informatics Course at Woods Hole](#) sponsored by NLM and the Woods Hole Marine Biology Laboratory.

### Key Reports Supported or Produced by NLM

- [Ending the Document Game](#) (2005)
- [Networking Health: Prescriptions for the Internet](#) (2000)
- [Evaluating the Coverage of Controlled Health Data Terminologies: Report on the Results of the NLM/AHCPR Large Scale Vocabulary Test](#) (1997)
- [For the Record: Protecting Electronic Health Information](#) (1997)
- [Making a Powerful Connection](#) (1995)

### Related Sites

[HealthIT](#) (U.S. Government Health Information Technology Web Site)

[Office of the National Coordinator for Health Information Technology \(ONC\)](#)

### NIH Initiatives

[Clinical and Translational Science Awards](#)

[CaBIG \(Cancer Biomedical Informatics Grid\)](#)

### NLM Participation in Standards Development

[Federal Health Architecture/Consolidated Health Informatics \(FHA/CHI\)](#)  
(committee member)

[National Committee on Vital and Health Statistics \(NCVHS\)](#)  
(staff to Standards and Security subcommittee)

[Healthcare Information Technology Standards Panel \(HITSP\)](#) (board member)

[Public Health Data Standards Consortium \(PHDSC\)](#)  
(founding member)

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[www.nlm.nih.gov/healthit.html](http://www.nlm.nih.gov/healthit.html)



Questions?

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