



***Epic***

**Inpatient. Outpatient. Every Patient.**

Testimony to:  
Subcommittee on Standards and  
Security

Epic

5-22-03

# Standards

- LOINC
- MedCin
- SNOMED

# LOINC

## PMRI Terminology

# The LOINC terminology

- Adequately specific for laboratory result reporting
  - Good domain coverage
  - Non-redundancy
- Good mapping utility (RELMA)
- Cannot beat the price

# Epic's use of LOINC

- Laboratory Results Reporting
  - Plan to use in upcoming Epic lab product
    - Design to assist users to map “local” tests to the appropriate LOINC code
  - Currently used in Interfacing (incoming & outgoing interfaces to/from Epic)
    - Result Component in HL7 messages can be represented by LOINC code

# Coded Data Capturing Interface

- Ability to use familiar test names and still code appropriately.
- “Local” tests are mapped to LOINC groups behind the scene.
- System and Method Type are specified via the normal workflow resulting in a single LOINC code from the LOINC group.

# MedCin

- Terms only
- Used to link documentation to a medical vocabulary in forms and lists

# Lists for Documentation

## Discrete Data

The screenshot shows the Epic Smart RTF Editor interface. The main text area contains a medical note with several sections: a paragraph about chest pain, a section for heart diseases, risk factors, ROS, PMH, MEDS, and PHYSICAL EXAM. The PHYSICAL EXAM section is expanded, showing a list of findings. A dropdown menu is open over the PHYSICAL EXAM section, listing various findings such as "chest is normal in appearance without tenderness", "clear to auscultation and percussion", "expiratory rhonchi", "expiratory wheezes", "expiratory wheezes and rhonchi throughout both lung fields", "rales", "bronchial breath sounds", and "dullness to percussion over". The dropdown menu is highlighted in blue. The interface includes a menu bar, a toolbar, and a status bar at the bottom.

EpicDesktop - FAMILY MEDICINE, WEST

Desktop Action Patient Care Billing Res/ADT Lab CRM/CM Referrals Home Health Reports Tools Admin Help

Epic Smart RTF Editor

@m@ @lname@ complains of {PAIN CHRONICITY:271} chest pain. The pain started {#:11} {Duration:23} ago. The pain occurs {CHEST PAIN TYPE:744} and is described as {PAIN QUALITY:272}. The pain radiates to {RADIATION/CHEST PAIN:12005} and is relieved with {CHEST PAIN RELIEVERS:745}. The pain usually lasts {CHEST PAIN DURATION NUMBERS:753} {Chest Pain Duration:752}.

@m@ @lname@ has had the following heart diseases {CARDIOVASCULAR HISTORY:748}

Risk factors in @m@ @lname@s history include {CARDIOVASCULAR RISK FACTORS:746}.

ROS: {ROS:754}

PMH:  
@pmh@  
@psh@  
@soc@

MEDS:  
@cmed@

PHYSICAL EXAM:  
General: {31}  
HEENT: {HEENT:343}  
Cardiovascular: {HEENT:343}  
Lungs: {Lungs:135}  
Abd: {ABD EXAM:5259}  
Ext: {EXTREMITY EXAM:5109}

chest is normal in appearance without tenderness  
clear to auscultation and percussion  
expiratory rhonchi  
expiratory wheezes  
expiratory wheezes and rhonchi throughout both lung fields  
rales {344}  
bronchial breath sounds {344}  
dullness to percussion over {344}  
\*\*\*

Accept Cancel

SEEGER, MARTY E Results, Call Center, Canceled Ord, Chart Cosign, Charts, Hospital ADT, Med Cosign, Overdue Result, 3:06 PM

# Lists for Documentation

## Discrete Data

The screenshot displays the Epic SmartList Editor for a 'LUNGS BRIEF EXAM' (ID 135). A 'Discrete Data Settings' dialog is active, showing a table of selection values and concepts. A 'Record Select' dialog is also open, showing a search for ID '260810' and a list of records including 'WHEEZING' with its corresponding Concept ID.

Selection Values	Concept	Context	Concept Value
<input checked="" type="checkbox"/>	chest is normal in appearance without		
<input checked="" type="checkbox"/>	clear to auscultation and percussion		
<input type="checkbox"/>	expiratory rhonchi		
<input type="checkbox"/>	expiratory wheezes		
<input type="checkbox"/>	expiratory wheezes and rhonchi through		

  

Name	Concept ID
WHEEZING	MEDCIN#7047
WHEEZING (AS A SYMPTOM)	MEDCIN#273
WHEEZING BILATERALLY	MEDCIN#10276
WHEEZING BILATERALLY APICES	MEDCIN#62472
WHEEZING BILATERALLY BASES	MEDCIN#62474
WHEEZING BILATERALLY MIDLUNG FIELDS	MEDCIN#62473
WHEEZING IS WORSE WITH A COLD	MEDCIN#1308
WHEEZING OCCURS ONLY WITH EXERCISE	MEDCIN#1307
WHEEZING ONLY WHEN BREATHING IN	MEDCIN#274
WHEEZING RECURS FROM TIME TO TIME (PERIODIC)	MEDCIN#277
WHEEZING RECURS INTERMITTENTLY (EPISODIC)	MEDCIN#278

# Forms for Documentation

Discrete  
Data

The screenshot displays an Epic Ophthalmology form. At the top, patient information is entered: Patient MRN 26769, Patient Name LOONEY, SAM, Sex M, Date of Birth 3/20/1934, and Primary Provider GREENE, MARK [777]. The main area is titled 'OPHTHALMOLOGY' and contains a list of exam types: 'Initial Exam' and 'Main Exam'. Below this list are buttons for 'Images', 'Eye Image', 'Funduscopy', and 'Cornea / Gonioscopy'. The central 'Eye Image' window shows two grayscale fundus images of eyes. The left eye has a red arrow pointing to a small red spot on the retina. A toolbar with various drawing and editing tools is located below the image window. On the right side of the form, there are buttons for 'Problem List', 'Allergies', and 'Current Meds'. At the bottom right, there are 'Cancel' and 'Accept' buttons.

# Forms for Documentation

Discrete  
Data

Ophthalmology

Patient MRN: 24574    Patient Name: LINLEY, HELEN    Sex: F    Date of Birth: 1/29/1930    Primary Provider:

OPHTHALMOLOGY

- Initial Exam
- Main Exam

Images

Eye Image

Funduscopy

Cornea / Gonioscopy

### INITIAL EXAM - REFRACTIVE

**Visual Acuity**

Method used: OD [ ] OS [ ]

Distance: OD OS

Glasses    CC [ ] [ ]

Contacts    SC [ ] [ ]

PinHole [ ] [ ]

Near

@ [ ] in    CC [ ] [ ]

@ [ ] in    SC [ ] [ ]

**Refraction**

OD

Ret [ ] [ ] [ ]    VA [ ]

M [ ] [ ] [ ]

Add [ ] [ ]

Cyc [ ] [ ] [ ] [ ]

OS

Ret [ ] [ ] [ ]    VA [ ]

M [ ] [ ] [ ]

Add [ ] [ ]

Cyc [ ] [ ] [ ] [ ]

**Glasses**

**Current Rx**

OD    OS

Sphere Cylinder Axis Add Prism    Sphere Cylinder Axis Add Prism

[ ] [ ] [ ] [ ] [ ]    [ ] [ ] [ ] [ ] [ ]

**Final Rx**

OD    OS

Sphere Cylinder Axis Add Prism    Sphere Cylinder Axis Add Prism

[ ] [ ] [ ] [ ] [ ]    [ ] [ ] [ ] [ ] [ ]

Copy from current    Copy from Manifest    Rx History

Problem List

Allergies

Current Meds

Cancel

Accept

# MedCin

- Disadvantages
  - Single Hierarchy
  - Redundancy (NOS problem)
  - Price
- Advantages
  - Descriptive terms

# SNOMED

- Not used by any Epic customers at this time
- Recent increase in interest
- Diagnoses, problem lists, category lists
- Need user interfaces
  - Diagnosis codes
    - 15,000 ICD9 ----- 88,000 SNOMED

# SNOMED

- Advantages
  - Domain coverage
  - Dummy ID
  - Permanence
  - Multiple hierarchy – semantic network
  - Synonyms
  - Avoidance of redundancy
  - National standard?

# Recommendations

- Recognize and/or adopt one or more clinically-specific terminologies that can serve as the core set of national PMRI terminology standards
- Analyze clinical functions and identify the gaps in existing terminologies for fulfilling these functions
- Support existing terminology developers to fill the gaps

# Recommendations

- “Among the presented terminologies, SNOMED and LOINC seem to be the most promising ones, covering different and disjoint aspects of the medical terminology domain. We will be watching the SNOMED evolution closely and working on helping our clients utilize its potential via our software.”

# Recommendations

- *Support the continued development of a national medication reference terminology*