

SNOMED CT Binding Strategy for CIMI Models

Cambridge, MA
September 21, 2013

Stanley M Huff, MD
Chief Medical Informatics Officer



**Intermountain
Healthcare**

*Healing for life*SM

CIMI Use of SNOMED CT

- Codes referenced in models
- Value sets referenced in models
- Pattern for model structure
- Translation of pre coordinated model content to post coordinated model content

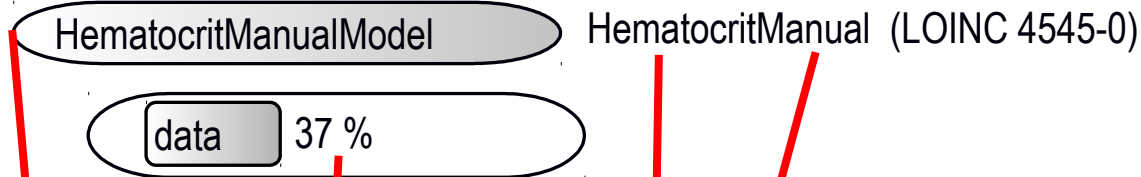
Selected CIMI
Policies, Decisions,
and Milestones

Terminology

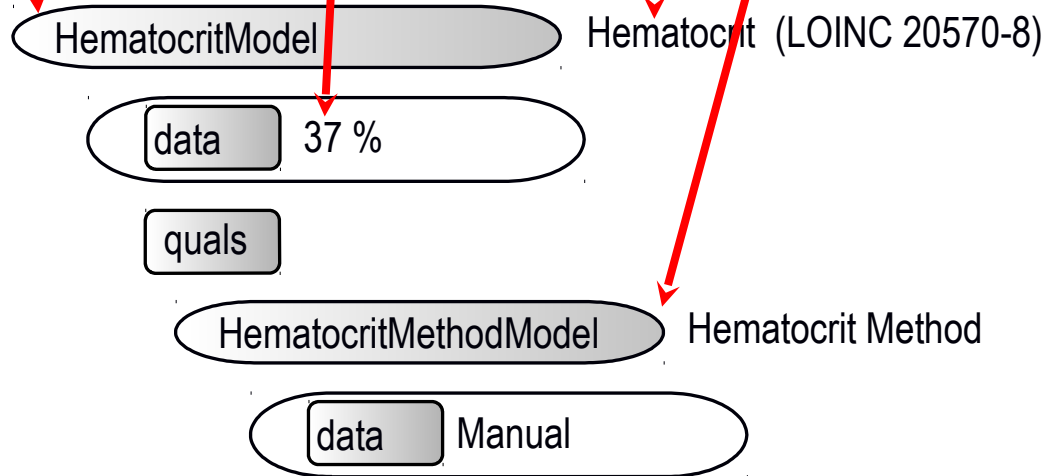
- SNOMED CT is the primary reference terminology
- LOINC is also approved as a reference terminology
 - In the event of overlap, SNOMED CT will be the preferred source
- CIMI will propose extensions to the reference terminologies when needed concepts do not exist
- CIMI has obtained a SNOMED extension identifier
- CIMI and IHTSDO have approved a “public good” use agreement for use of SNOMED CT in CIMI models
- CIMI will create a Terminology Authority to review and submit concepts to IHTSDO as appropriate

Isosemantic Models

Precoordinated Model (CIMI approved Model)

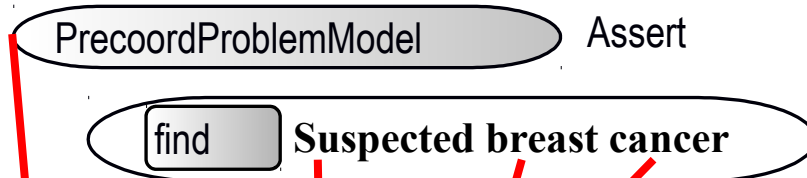


Post coordinated Model (CIMI preferred Model)

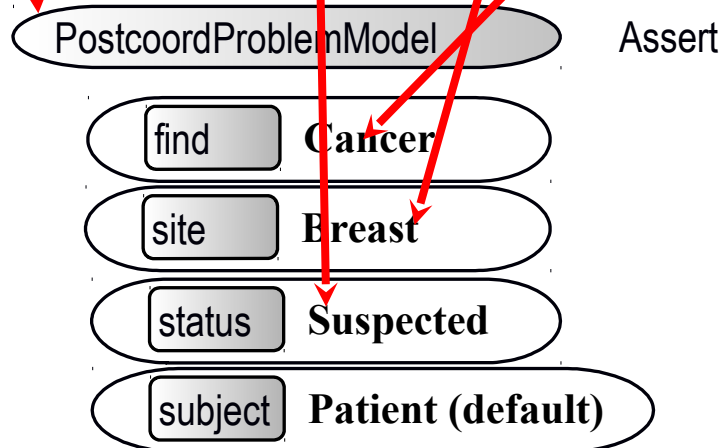


Isosemantic Problems

Precoordinated Model (CIMI approved Model)



Post coordinated Model (CIMI preferred Model)



Isosemantic Models

- CIMI supports isosemantic clinical models:
 - We will keep isosemantic models in the CIMI repository that use a different split between pre-coordination versus post coordination (different split between terminology and information model)
 - One model in an isosemantic family will be selected as the preferred model for interoperability (as opposed to everyone supporting every model)
 - Profiles of models for specific use cases will be created by authoritative bodies: professional societies, regulatory agencies, public health, quality measures, etc.)

March 29, 2012 – Semantic Interoperability

- CIMI Executive Committee affirms that CIMI models must be capable of supporting semantic interoperability across a federation of enterprises. CIMI models are not limited to supporting semantic interoperability only within an enterprise or to just supporting syntactic or structural interoperability
- We will define not only the semantic meaning of each node in the clinical model, but also define the semantic meaning of the relationship between each parent and child node in the hierarchy.
- SNOMED relationship concepts will be used to define the parent-child relationships in the models.

Isosemantic Problems

Precoordinated Model (CIMI approved Model)

PrecoordProblemModel Assert

find Suspected breast cancer

Post coordinated Model (CIMI preferred Model)

PostcoordProblemModel Assert

find Cancer

site Breast

status Suspected

subject Patient (default)

From SNOMED CT Relationships

- Concept: [134405005] Suspected breast cancer
 - Associated finding | Malignant tumor of breast (Defining)
 - Associated morphology | Malignant Neoplasm (Defining)
 - Finding site | Breast structure (Defining)
 - Finding context | Suspected (Defining)
 - Subject relationship context | Subject of record (Defining)

Model with relationship bindings

Precoordinated Model (CIMI approved Model)

PrecoordProblemModel Assert

find ??

Post coordinated Model (CIMI preferred Model)

PostcoordProblemModel Assert

Assoc morphology [116676008] ??

Finding site [363698007] ??

Finding context [408729009] ??

Subject rel context [408732007] ??

Model with relationship bindings

Precoordinated Model (CIMI approved Model)

PrecoordProblemModel Assert

find Suspected breast cancer [134405005]

Post coordinated Model (CIMI preferred Model)

PostcoordProblemModel Assert

Assoc morphology [116676008] ??

Finding site [363698007] ??

Finding context [408729009] ??

Subject rel context [408732007] ??

From SNOMED CT Relationships

- **Concept: [134405005] Suspected breast cancer**
 - Associated finding | Malignant tumor of breast (Defining)
 - Associated morphology | Malignant Neoplasm (Defining)
 - Finding site | Breast structure (Defining)
 - Finding context | Suspected (Defining)
 - Subject relationship context | Subject of record (Defining)

Model with relationship bindings

Precoordinated Model (CIMI approved Model)

PrecoordProblemModel Assert

find Suspected breast cancer [134405005]

Post coordinated Model (CIMI preferred Model)

PostcoordProblemModel Assert

Assoc morphology [116676008] Malignant Neoplasm [367651003]

Finding site [363698007] Breast structure [76752008]

Finding context [408729009] Suspected [415684004]

Subject rel context [408732007] Subject of record [410604004]