Seminar on Recognised Terminology – Hong Kong Clinical Terminology Table (HKCTT)

Terminology for eHR

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Outline

- Introduction to Terminology
- Terminology in eHR
- Terminology in practice







Standardisation for eHR

- Ensure accurate interpretation of health data by all parties
- Support reuse of data
- Reduce duplicated efforts in data entry
- Facilitate interoperability of systems for data captured at different platforms
- Improve efficiency of healthcare services
- Assist in protection of public health



Information Architecture

Every medical fact has a concept What the data means Every medical fact has a context How data should be interpreted Every medical fact has a presentation How data are organized I presented



Areas

Registries

- Patient
- Practitioner / Institute
- Location (address)
- eHR content
- Terminology
- Messaging
- Management process





Clinical Documentation

20/8/15 Jugtanl Mige - Of lentively of exclusion - Of the second lipid - Of the second lipi	a 32 aal IV. HV mildly thickened with mild MS and MR. AV m mane LA mize Physical Exam Social History Risk Assessment Functional Assessment (FAS)1 FAS2 F	
obeme abdomen, difficult to no bleeding tendency no fluid overload 149-87, P.73 FE: sultiple lipoass over the b obeme abdomen, difficult to Hep B related cirrhosis ?Madelung's dimease Plan of Management note EP next time refer liver clinic check LFT. AFP. CEP. HBeAg 1	Vital Signs and Observations Temp: C Tympanic Pulse: /min Brachial Pattern: Pacemaker: Pattern: Pacemaker: CVP: CVP level: Sp0a: % Oa Therapy: Coughing: C yes © No Sp1ut: C Yes © No Coughing: C yes © No Sp1ut: C Yes © No Coughing: C yes © No Sp1ut: C Response to Pain (P) CResponse to Voice (V) C Unresponsive (U) GCS: Eye: Verbal: Verbal: Motor: Verbal: Verbal: Verbal: Motor: VH	Body Measurement Weight kg 10% weight loss within 6 months prior to admission Degnosis Find Cetegory Keyword Veight Gout 274.9 Gout 274.0 Gouty arthropathy 274.0 Gouty arthritis 274.10 Gouty arthritis 274.2 Gouty arthritis 274.3 Gouty tophi 274.4 Gouty pephropathy 274.5 Gouty tophi of ear 274.8 Gouty tophi site nec 274.89 Gouty intis 274.80 Gouty neuritic Image: Close Close

Free Text Data

• Same word, different meanings

o COLD, MI, diabetes, fundus

Different words, same meaning

• Oral, per oral, by mouth, P.O, orally

Context dependent

o Current complaint, past medical history, family history

Negation

• Explicit, e.g. denied chest pain

o Implicit, e.g. clear lung

Uncertainty

Probably, suggest, possible, likely

• Lexical variant

o Anaemia vs anemia, hepatic vs liver



Terminology

- A finite, enumerated set of terms used to convey information unambiguously (a controlled vocabulary)
- Encode medical information so that computers can process the data easily
- Reduce complexity by restraining content (what can be said) and syntax (how it is said)



Purposes of Terminology

- Encode clinical information
- Facilitate the storage of clinical information
- Support sharing and reuse of clinical information
- Support efficient query formulation
- Create a natural language output from manual structured input
- Support the application of decision support algorithms



The World of Terminology

There are so many of them:

- Diagnosis/signs and symptoms ICD9CM, ICD10, ICD10CM, ICD10AM, ICD-O, ICPC, ICF, SNOMED CT, Read Codes, MedDRA, CTCAE, WHOART, MEDCIN, DSM
- Procedures CPT, CDT, HCPCS, OCPS, SNOMED CT, ICD9CM, ICD10-PCS
- Nursing NANDA, NIC, NOC, OMS, HHC
- Diagnostic tests LOINC, UltraSTAR
- Drugs VANDF, NDC, RXNORM, NDDF
- Medical devices UMDNS, GMDN, SPN
- Genomics GO, HUGO, NCBI Taxonomy



Standard Terminologies

- Numerous standards
 - Each serving a particular purpose
 - Reference for health informatics products, e.g. First DataBank
- No single terminology covers all domains
- Unavoidable mapping for various purposes / system design
 - Well management is needed
- Standard terminologies being updated regularly
 - Impact on data retrieval
 - Analysis / decision support / rules.....
- Implications
 - Select a few commonly adopted terminologies each with sufficient breadth & depth of individual / several domains
 - Management for ongoing updates



Recognised Terminologies in eHR

A set of reference terminologies that have been acknowledged to be used in eHRSS:

- Hong Kong Clinical Terminology Table (HKCTT)
- International Classification of Diseases, 10th Revision (ICD-10)
- International Classification for Primary Care, 2nd Edition (ICPC2)
- Logical Observations, Identifiers Names and Codes (LOINC)
- Systematized Nomenclature of Medicine, Clinical Terms (SNOMED CT)
- Registered Pharmaceutical Products (RPP)



HKCTT in Practice

- Support clinical documentation
 - Alias
- Facilitate decision support
- Provide organised data in eHR Viewer
- Assist data retrieval/reporting



Tips for Terminology Management

Creating a terminology

- Meaningless identifier to allow expansion
- Unique meaning
- To facilitate searching
 - Synonyms
 - Common list
- Mapping
 - Prefer native use of recognised terminology than mapping
 - If unavoidable
 - Check rules of individual terminologies
 - What you see, what you get
 - Must be validated by professionals
- **Keep updating**

Cimino's Desiderata

- Content
- Concept oriented
- Concept permanence
- Nonsemantic concept identifier
- Polyhierarchy
- Formal definitions
- Reject "not elsewhere classified"
- Multiple granularities
- Multiple consistent views Representing context
- Graceful evolution Recongize redundancy



Terminology for eHR - HKCTT



Thank You

