Networking and Health Information Exchange
Unit 4c
Basic Health Data Standards

Slide 2
Unit 4c Objectives
• Understand the use, purpose and interrelation among sets of controlled vocabularies in use today.
• Identify the more common controlled vocabularies in use today: SNOMED, MEDCIN, MedDRA, Nursing terminologies, MeSH and UMLS

Evolution of SNOMED
• Systematized Nomenclature of Diseases and Organisms (SNDO) - 1928 - NY Academy of Medicine
• Systematized Nomenclature of Pathology (SNOP) - 1965 -
• Systematized Nomenclature of Medicine (SNOMED) - 1979
• SNOMED-RT (Reference Terminology)(1999)
• SNOMED-CT (merger with Read2(2002)
• International Healthcare Terminology SDO
Slide 4

**SNOMED-CT**
- Created by the merger, expansion and restructuring of SNOMED RT and Read Codes
- 344,000 concepts, 450,000 medical descriptions, 700,000 concept interrelations
- Cross maps to ICD9-CM, ICD10, LOINC

Slide 5

**SNOMED-CT components**
- Concepts
- Descriptions
- Hierarchies
- Relationships
- Subsets

Slide 6

**Example**

```plaintext
294190008|Burn of skin|
246112005|Severity|=24484000|severe
363698007|Finding Site|=|113185004|Structure of skin between fourth and fifth toes|
272741003|Laterality|=|7771000|left|
```

Such expressions are said to be post coordinated as contrasted to pre coordinated terms.
Slide 7

Semantic representation in SNOMED-CT

Tularemia

Bacterial Pneumonia

Lung Structure

Inflammation

Rumonary Tularemia

associated morphology

Francisella tularensis

Slide 8

SNOMED axes

- Findings [F]
- Procedures [P]
- Body structures (anatomy) [T]
- Morphology [M]
- Organisms [L]
- Substances [C]
- Physical agents [A]
- Occupations
- Social context
- General
- Other

Slide 9

Terminology model

- Ruptured ovarian cyst (D7-75111)
  - is a disease (D7-00000) and
  - has morphology rupture (M-14400) and
  - has morphology cyst (M-33400) and
  - has topography ovary (T-87000)
Slide 10

MEDCIN

- System of standardized medical terminology developed by Medicomp Systems
- Includes over 250,000 clinical data elements encompassing symptoms, history, physical exam, tests, diagnoses and therapy

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International Classification for Primary Care (ICPC)

- Used by individual family practices and group practices
- Use is to record primary care patient encounter
  - Includes reason for encounter (chief complaint)
  - Focuses on patient perspective
  - Includes fear of disease
  - Request for preventive services
  - Request for treatment

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MedDRA

- International medical terminology used by regulatory authorities and regulated biopharmaceutical industry
- Terminology for coding all medical data obtained during all phases of development and marketing:
  - Symptoms
  - Signs
  - Disease
  - Diagnoses
  - Indications
  - Investigations/Procedures
  - Medical/Social History
**Slide 13**

**MedDRA codes**

- Unique 8 digit number, starting with 10000001
- As terms added, codes assigned sequentially
- Example
  - Gastric hemorrhage (LLT) = 10017789
  - Gastric haemorrhage (LLT) = 100177188
  - Gastrointestinal disorders (SOC) = 10017947

**Slide 14**

**Nursing terminologies**

- NANDA Taxonomy
- Clinical Care Classification
- Patient Care Data Set
- Omaha System
- AORN Perioperative Data Set
- International Classification of Nursing Practice
- Nursing Interventions Classification
- Nursing Outcomes Classification

**Slide 15**

**Coding nursing concepts**

- Diagnoses/judgments
- Interventions
- Outcomes
- Goals
Nursing terminologies

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Unified Medical Language System

The purpose of the Unified Medical Language System is to improve the ability of computer programs to "understand" the biomedical meaning in user inquiries and to use this understanding to retrieve and integrate relevant machine-readable information for users.

- Donald A.B. Lindberg, 1993

UMLS structure

- 3 main components
  - Metathesaurus
  - Semantic Network
  - SPECIALIST Lexicon and tools

Choice of terminologies

- TOCS
- OPCS
- SNOMED
- Nursing
- UMLS

Coverage:  + minimal,  ++ partial, +++ extensive
Current situation

- SNOMED-CT is gaining momentum as the terminology of choice
- LOINC is used in the US for laboratory test names
- RxNorm is likely to be drug code of choice in US
- ICD x is required for reimbursement
- Adverse events – maybe MedDRA