The role of SNOMED CT in healthcare systems across the world

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Outline

- **What is the IHTSDO?**
- **What is SNOMED CT?**
- **What does SNOMED CT add to an Electronic Health Record?**
- **Working with other international standards**
  - SNOMED CT and classifications
  - SNOMED CT and devices
  - IHTSDO and GS1

IHTSDO: International Health Terminology Standards Development Organisation

- **International not-for-profit association**
  - Based in Denmark
  - Owned by National Members
  - Governed by General Assembly of its Members
  - Management Board elected by GA
  - Funded by countries based on national wealth (GNI)
- **Delivers SNOMED Clinical Terms**
  - Licensed to registered Affiliates
  - Free use in Member countries (22 Members)
  - Low-cost licenses for institutions in other countries
    - Free in poorest countries
    - Free for "Public Good" applications

SNOMED Clinical Terms

- A controlled coded clinical terminology for use in Electronic Health Records
  - Content from
    - "SNOMED 3.5" and "SNOMED RT" developed by the College of American Pathologists
    - "Read Codes" developed by & widely used in the UK NHS
  - Design based on
    - Identified user requirements
    - Practical experience
    - Scientific principles established in peer reviewed publications
  - First released in 2002
- Acquired for the public good by International Health Terminology Standards Development Organisation (IHTSDO) in 2007

EHR Benefits of SNOMED CT

- Enhancing the care of individual patients:
    - Display of appropriate information
    - Guideline and decision support integration
    - Communicating and sharing relevant information
- Enhancing the care of populations of patients:
    - Epidemiology monitoring and reporting
    - Research into the causes and management of diseases
- Supporting cost-effective delivery of care:
    - Guidelines to minimize the risk of costly errors
    - Reducing duplication of investigation and interventions
    - Auditing the delivery of clinical services
    - Planning service delivery based on emerging health trends

Design Benefits of SNOMED CT

- **Comprehensive clinical scope**
  - Reduces need to support multiple code systems
  - Common framework for consistent retrieval and processing
- **Logical definitions**
  - Allow clinically relevant meaning-based retrieval
- **Post-coordination**
  - Combining codes to add detail and specificity
  - Increases scope without 'combinatorial explosion' of codes
- **Updates and versioning**
  - Regular updates to International Release (six-monthly)
  - Support for incremental updates
  - Full historical view of all previous versions of SNOMED CT

SNOMED CT - Comprehensive Scope

+ Clinical Finding
+ Diagnosis
+ Symptom
+ Procedure
+ Observable
+ Body structure
+ Organism
+ Substance
+ Pharmaceutical
+ Physical object
+ Physical force
+ Specimen

Global Benefits of SNOMED CT

- **IHTSDO ownership**
  - Independent of proprietary code systems
  - Shared collaborative development and maintenance
  - Transparent affordable licensing
    - Free use in Member countries
    - Free use in approved research and "public good" initiatives
    - Costs elsewhere related to national wealth
- **International approach**
  - Standard world-wide coding of clinical concepts
  - Full support for translation to national languages

National Flexibility with SNOMED CT

- **SNOMED CT - Extensible design**
  - Enables addition of National or local content
  - Allows for translations per country
  - Configurable to meet National requirements
  - Reference Sets: a standard representation for
    - Subsets and Value-Sets of SNOMED CT
    - Cross Mapping to/from SNOMED CT
    - Other references to SNOMED CT content

- **IHTSDO Workbench**
  - Open source tools to support maintenance and release of National Extensions to SNOMED CT

IHTSDO working with other standards bodies

- **WHO**
  - SNOMED CT to ICD 10 maps
  - SNOMED CT part of foundation layer of ICD 11
  - SNOMED CT and ICF harmonization
- **WONCA - joint collaboration on**
  - A General Practice SNOMED CT reference set
  - Mapping from SNOMED CT reference set to ICPC-2
- **LOINC & cNPU (IFCC/IUPAC) - seeking agreement:**
  - To ensure that SNOMED CT, LOINC & cNPU work together
  - To avoid overlapping content development effort
- **GS1 – cooperation agreement**
  - Position statement on how both organizations standards work together in healthcare systems

IHTSDO working with other standards bodies

- HL7
  - Terminfo – guidance for binding of SNOMED CT to HL7 messages
  - Use of IHTSDO workbench to maintain HL7 vocabulary
  - Alignment of HL7 vocabulary with SNOMED CT, leading to
  - Development of a Terminology Authority in HL7 to triage and coordinate all requests for changes to SNOMED CT
- European projects
  - epSOS – SNOMED CT currently under public good policy
  - SemanticHealthNet – working to ensure semantic interoperability between EHR systems
  - ERA-EDTA – European Renal Association and European Dialysis and Transplant Association – Releasing new SNOMED CT based coding or renal diseases this autumn

SNOMED CT and Devices

- IHTSDO and the Global Medical Device Nomenclature (GMDN) Association have an agreement to work together
  - Content from the GMDN devices nomenclature has been incorporated into a SNOMED CT technology preview (Aug 2012)
  - In the long term, SNOMED CT's device hierarchy will be organized and structured with categories based on GMDN, and the content of the two (SNOMED CT devices and GMDN) will be tightly coordinated
- Device Regulation and Safety
  - Close coordination of GMDN and SNOMED CT will facilitate the sharing of clinical data, in which device types are used for patient care, with regulatory bodies for monitoring and safety purposes

IHTSDO and GS1

- Working together
  - Framework of cooperation – July 2010
  - Liaison in areas of mutual interest and joint position statement
  - Closer working relationship – moving towards ensuring compatibility of respective standards
- Standards
  - SNOMED CT
    - Clinical terminology for electronic health records
    - Supports the capture and analysis of detailed clinical information about the care of individuals
  - GS1 standards
    - Identify items and locations within the supply chain, linking to hospitals
    - Unique identification of individuals

Example use case (1)

- Orthopedic repair devices for implant
  - SNOMED CT codes allow recording the type of operation performed, including the class(es) of devices implanted
    - Primary open reduction of fracture of neck of femur and open fixation using Charnley compression screw
  - GS1 identifies the particular devices used
    - Can be used to track the manufacturer of the particular device, along with its characteristics

Example use case (2)

- Decision support for device prescription
  - Contraindication – standard list can be coded, and matched (all subtypes) against the patient's coded problem list.
    - Compression hosiery should not be prescribed to those with contraindications.
      - 42343007 congestive heart failure
      - 399957001 peripheral obstructive arterial disease
      - 77910001 septic phlebitis
      - 297946004 lower limb nerve lesion
      - 446841001 Ankle brachial index <1.0

Example use case (3)

- Respiratory therapy assessment in asthma diagnosis and therapy
  - Spirometer – linked to EHR via data transfer device
  - Bronchodilator inhaler for administration of meds
  - Peak flow meter – for home monitoring adequacy of treatment

Summary

- IHTSDO is the global organisation that delivers SNOMED CT
- SNOMED CT is the leading global clinical terminology
- SNOMED CT is designed for the EHR and Public Health
- SNOMED CT supports meaning-based retrieval to support care of individual patients and populations
- The IHTSDO works with other international standards organisations to ensure interoperability between standards and to avoid duplication for those developing and using EHRs

Thank you for your attention

- Contact IHTSDO: info@ihtsdo.org
- IHTSDO home page: www.ihtsdo.org
- SNOMED CT home page: www.snomed.org