NSHA IM/IT presenting

SNOMED CT ©

a standard clinical terminology
SNOMED Introduction
Mary Eileen MacPhail
SNOMED CT 101

- History
- IHTSDO
- SNOMED CT
- Resources
SNOMED CT History

Emerged over the decades from two primary roots
- College of American Pathologists (CAP)
- UK National Health Service

The two merged; first version of SNOMED CT was released in 2002

Systematized Nomenclature of Medicine  Clinical Terms
IHTSDO

International Health Terminology Standards Development Organization

- Established in 2007 to take over ownership and responsibility of SNOMED CT
- It is a not-for-profit association that is run by its members
- Members are countries. 28 countries. Switzerland joined Jan 2016.
- Canada is a member of IHTSDO and under its guidance has developed; Canada: SCT CA, National Extension including English and French components
- Other member countries have created and continue to maintain a number of National Extensions and translations
Why do we need SNOMED CT?

Paper charts hold many pieces of data relating to a patient. Retrieving information is cumbersome.
Patient Illness History

Date: ______________________

Chief complaint: ________________________________________________________

Medications: _____________________________________________________________

Supplements: _____________________________________________________________

Other treatments/surgeries: ________________________________________________

History of present illness: _________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

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Page 1 of 2
Why do we need SNOMED CT?

Paper charts hold many pieces of data relating to a patient. Retrieving information is cumbersome.

Automating the paper chart is a step forward. It improves access to the information.
<table>
<thead>
<tr>
<th><strong>History</strong></th>
<th><strong>Physical</strong></th>
<th><strong>Other</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Chief complaint</td>
<td>• General Appearance</td>
<td>• Investigations</td>
</tr>
<tr>
<td>• History of Presenting Illness</td>
<td>• Skin</td>
<td>• Impression / Plan</td>
</tr>
<tr>
<td>• Past Medical History</td>
<td>• Head &amp; Neck</td>
<td>• Medications / Allergies</td>
</tr>
<tr>
<td>• Past Surgical History</td>
<td>• Eyes, Ears, Nose &amp; Throat</td>
<td>• See BPMH</td>
</tr>
<tr>
<td>• Social History</td>
<td>• Respiratory System</td>
<td></td>
</tr>
<tr>
<td>• Family History</td>
<td>• Cardiovascular System</td>
<td></td>
</tr>
<tr>
<td>• Functional Inquiry</td>
<td>• Abdomen</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Genitourinary</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Extremities</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Central Nervous System</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Psychological</td>
<td></td>
</tr>
</tbody>
</table>
Why do we need SNOMED CT?

Paper charts hold many pieces of data relating to a patient. Retrieving information is cumbersome.

Automating the paper chart was a step forward. It improved access to the information.

SNOMED CT provides a standardized way to represent clinical information. By storing the clinical information in a standardized way it allows meaning-based retrieval.
The IHTSDO SNOMED CT Browser

The IHTSDO SNOMED CT Browser has just got better! This is version 2.0. Please go to the release notes to see what’s changed!

The IHTSDO SNOMED CT Browser provides ways to browse and search SNOMED CT. The browser has been implemented as part of development within the IHTSDO Open Tooling Framework, by the IHTSDO and its development partners. The Browser is provided by the IHTSDO to anyone for reference purposes. The interface and REST APIs are not to be used as part of production systems in healthcare settings.

Please provide any feedback on the browser by clicking on the feedback button at the top of the page. Your feedback is essential to the evolution and improvement of this service. Please visit SIRS to provide content feedback.

International Editions

Local Extensions

Many thanks to the IHTSDO Member countries who have provided their extensions in this browser. If you would like to enquire further about any of the Member country extensions in this browser, please contact the relevant National Release Center via the URLS below:

- National E-Health Transition Authority (NEHTA), Australia
- Canada Health Infoway, Canada
- The National eHealth Authority, Denmark
- Nicz, Netherlands
- The National Board of Health and Welfare, Sweden
- The Health and Social Care Information Centre (HSCIC), United Kingdom
- National Library of Medicine (NLM), United States
- Salud uy, Uruguay

If you would like to get involved in the development, this code is available under an Apache v2 open source license. You can also find more information on the current backlog of feedback that is up for possible development here - iHTSDO

browser.ihtsdotools.org/e
SNOMED CT covers a wide range of clinical specialties, disciplines and requirements.

Having one common clinical terminology enables improved communication. The structured clinical information can be shared and reused.

> 300,000 concepts defined

Each concept could have a relationship with other concepts
Resources

http://www.ihtsdo.org/
SNOMED CT Starter guide
IHTSDO Online SNOMED CT Certification
InfoCentral, Canada Health Infoway
3 Questions. 3 Experts. 3 Perspectives.
Dr. Margie Kennedy
What SNOMED implementation best practices exist?
SNOMED Implementation Best Practices
NSHA Presentation – Feb 4, 2016

Margie Kennedy, PhD, RN, CPHIMS-CA, PMP, P2P, ITILF
CNIO & Managing Partner
Clinical Informatics

Informatics for a healthier world
Focus

• Elaborate on whether an institution should implement SNOMED without an EHR currently in place,
  – where to start (i.e. which systems or clinical areas),
  – common reasons for SNOMED implementation failure or success and lessons learned (or pitfalls) from practical experience or case studies.
SNOMED CT Implementation

1. Source: IHTSDO (2014) SNOMED CT Implementation
Implementation Contributors

- Health care professionals
  - Physicians, nurses, allied health professionals
- EHR Developers
- Terminology Service Developers
  - Terminology experts
  - Guideline developers
- Knowledge publisher
- Health Service Managers
- EHR Purchaser/Procurement
- Clinical Researcher

2. Source: IHTSDO (2014) SNOMED CT Implementation
Implementing SNOMED CT

• 3 typical implementation pathways
  – Replacing outdated legacy systems
  – Evolving system
  – Greenfield
    • No EHR/CIS currently in place

• NSHA has indicated that no EHR is in place so greenfield is recommended as the Implementation path
Advantages of Greenfield Implementation

• Less constrained by the past
  – fewer existing systems = fewer dependencies, less complexity, less cost
  – fewer existing users = less resistance to change

• Opportunity to be strategic
  – What is your vision for care delivery?
  – How does (can) patient health information support the vision?
    • Care Delivery
    • Planning
    • Policy Making
    • Evaluation
  – How can data standardization / SNOMED support the vision?
    • Interoperability
    • Data aggregation, analysis and reporting
  – What are the implications to other aspects of the EHR roadmap?
Greenfield Caveat

• Legacy systems (Lab, PACS, ADT, etc.) likely exist:
  – Historical data coded using legacy dictionaries
  – Users with knowledge and opinions

• Opportunity to leverage and learn from the past:
  – Legacy dictionaries point to what data is needed to support the business
  – Legacy users can provide historical context
  – Interested and influential stakeholders can help contribute and guide an initiative
Implementation Approach

• Master Data Management
  – Master data design
  – Mapping ancillary systems to master data
  – Mapping other coding systems to master data

• Implementation
  – Engaging stakeholders
  – Establishing governance process
  – Establishing development and maintenance processes
• A comprehensive method of linking data in all systems to a common point of reference:
  – Patients
  – Providers
  – Diagnosis Concepts
  – Procedures
  – Results
  – Etc

• Terminology standards like SNOMED can provide a comprehensive source of reference data for master files.
• Dictionaries from legacy systems provide useful information about the required scope of terms required.
• Mapping legacy dictionaries to standards provides a means to use legacy data within solutions or for retrospective analysis and reporting.

• *This discussion/decision is an essential component of your strategic planning and early steps*
Full SNOMED CT Adoption

- **SNOMED CT functions as:**
  - Reference terminology
  - Interface terminology

- Legacy Systems migrate to new content
• SNOMED CT functions as Reference Terminology for integration.
• Legacy Terminologies (e.g., DIS, PACS, etc.) persist in legacy systems.
• Mapping from reference terminologies to support translation of data in interface engine.
• SNOMED CT or Legacy descriptions may be used in new systems.
Implementation Priorities

• Engagement
  – CLINICIANS ARE KEY
    • Physicians, nurses, allied health
    • Specialty and interprofessional groups are necessary

• Governance
  – Clear, consistent, and transparent project governance
    • Well developed accountabilities, decision making, and lines of escalation
    • Broad representation from key partners and stakeholders
    • Deliberate attention and resourcing to establishing consensus on terminology process, terms, mapping, etc.
    • Dedicated resourcing for change management
    • Training plans & skill development/resource development fundamental
Critical Success Factors

- Strategic planning & engagement
- Consensus process on terminology decisions
- Ease of use/data entry
- Communication and change management
- Effective use
  - Retrieval
  - Analytics
  - Reuse
Effective Communication in Implementations

- How the customer explained it
- How the Project Leader understood it
- How the System Analyst designed it
- How the Programmer wrote it
- What the customer really needed
Example – Kaiser Permanente

- Founded in 1945, Kaiser Permanente is one of the United States’ largest not-for-profit health plans, serving 10.1 million members, with headquarters in Oakland, California.
- It comprises:
  - Kaiser Foundation Hospitals and their subsidiaries
  - Kaiser Foundation Health Plan, Inc.
  - The Permanente Medical Groups.

- The Permanente Medical Groups, which provide care for Kaiser Permanente members, continuously develop and refine medical practices to help ensure that care is delivered in the most efficient and effective manner possible.

- Kaiser Permanente is consistently recognized for clinical excellence.

KP HealthConnect is one of the largest private electronic health systems in the world. It securely connects:
- more than 611 medical offices to 37 hospitals,
- members (patients) to their personal health information and health team, and
- clinicians to the latest medical knowledge and treatments.

KP HealthConnect was designed to improve member safety and quality of care by proving a single, comprehensive source of patient health information integrated with decision support, measurement and analysis tools.

Kaiser Permanente attributes KP HealthConnect with enabling significant improvements in patient satisfaction and patient health outcomes.

See more at: http://share.kaiserpermanente.org/totalhealth/connectivity/#sthash.cQjFIljl.dpuf
Kaiser Permanente
Convergent Medical Terminology

• CMT is a series of SNOMED CT based master files that are foundational to KP HealthConnect.
• The master files provide lists of clinician friendly terminology mapped to SNOMED CT, ICD-9, ICD-10, LOINC and other coding systems to support:
  – clinical documentation,
  – interoperability with ancillary systems,
  – data collection & analysis,
  – clinical decision support,
  – external reporting, and
  – charge capture.
CMT is a SNOMED based Master Data Management approach.
Results

IS HEALTH INFORMATION TECHNOLOGY really WORTH IT?

Four facts you should know

1. Parents who use My Health Manager are more likely to attend six or more of the nationally recommended well-child care visits by 15 months of age.

2. Diabetes patients visited the emergency room 29 fewer times per 1,000 patients and were hospitalized 13 fewer times per 1,000 patients annually after KP HealthConnect was implemented.

3. Patients with access to My Health Manager are 2.6 times more likely than nonusers to remain Kaiser Permanente members.

4. Secure patient-physician email is associated with improvements in Healthcare Effectiveness Data and Information Set (HEDIS) care measurements. This includes 2 percent to 6.5 percent improvements in glycemic, cholesterol, and blood pressure screening and control.

Produced by Kaiser Permanente for HIMSS14
Visit share.kp.org to learn more about Kaiser Permanente research that shows how technology is transforming health care.
Canadian Successes

• Canadian Thoracic Society (Canadian Respiratory Guidelines Committee (CRCG)) – in progress
  – PRESTINE: Pan-Canadian REspiratory STandards for the Electronic Health Record

• Canadian Partnership Against Cancer – ongoing
  – Synoptic Surgical Reporting
  – Electronic Synoptic Pathology Reporting Initiative

Informatics for a healthier world
Key Factors that Contribute to Failure

• Lack of clarity on project goals and decision making
  – Project/Governance
  – Lack of consensus on Terminology & clinical terms

• Lack of effective clinician and stakeholder engagement
NSHA SNOMED CT Implementation

• Substantive initiative
• Potential value for NSHA is enormous
  – Clinical value & health information exchange
  – Enhanced data quality & analytics
  – Cost effectiveness
• NSHA is at a pivotal moment to adopt and capitalize on SNOMED CT value and benefits
  – Strategic planning & deliberate engagement will provide a solid foundation on which to build your preferred future.
Thank you

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Informatics for a healthier world
How can SNOMED CT be technically implemented in a large healthcare organization such as NSHA?
Dr. Abidi did not use slides.
He spoke to audience for 10 min instead.
Captured on recording of Lync session.
What is the value of SNOMED?
What is SNOMED CT? And Why do we need it?
What is SNOMED CT?

SNOMED CT is the most comprehensive multilingual terminology in the world.
How is SNOMED CT Managed?

SNOMED CT is managed and delivered through IHTSDO
IHTSDO delivering SNOMED CT

OUR MISSION
IHTSDO produces and enhances the vocabulary that enables the clear exchange of health information for all.

SNOMED CT is the most comprehensive and precise clinical healthcare terminology in the world; every day helping healthcare professionals to save time, money and lives with its universal, codified, clinical terminology system.

SNOMED CT also supports healthcare professionals to shortcut innovation in research and development through to learning and development by producing and enhancing the vocabulary that enables the clear exchange of health information within and between nations for the benefit of our customers.

First released in 2002, SNOMED CT has grown in maturity and since 2007 has been owned and maintained by the International Health Terminology Standards Development Organisation (IHTSDO). IHTSDO is a not for profit association that owns and maintains SNOMED CT as a product and provides services to support 27 Member countries.
OUR VISION

BY 2020 CLINICAL TERMINOLOGIES WILL BE USED GLOBALLY, WHICH WILL RESULT IN BETTER HEALTH, SUPPORTED BY ONE LANGUAGE OF HEALTH.

OUR CORE PRINCIPLES

1. EXPERTS IN HEALTH TERMINOLOGY

2. SUCCESS THROUGH COLLABORATION

3. RIGOROUS FOCUS ON QUALITY

4. CLOSEST TO CUSTOMERS

5. OPEN AND ACCOUNTABLE

- QUALITY FOCUSED CONTENT DEVELOPMENT WITH ADHERENCE TO STRICT EDITORIAL RULES.

- INCLUSIVE INVOLVEMENT OF DIVERSE CLINICAL GROUPS AND MEDICAL INFORMATICS EXPERTS.

- A QUALITY IMPROVEMENT PROCESS THAT IS OPEN TO PUBLIC SCRUTINY AND VENDOR INPUT.

- MINIMAL BARRIERS TO ADOPTION AND USE.
HOW DOES SNOMED CT EVOLVE WITH THE CHANGES IN MEDICINE?

Change requests from Stakeholders (based on requirements of the Healthcare system)

IHTSDO Authors new content

Content is Clinically validated

Content is added to the biannual International Release
OUR PRODUCT BENEFITS

**VENDORS**
- SNOMED CT provides the potential for vendors to enable robust clinical decision support functionality, leading to market differentiation.
- The standard can be implemented once and marketed on a global scale.
- Vendors can access the most up to date version that is continuously maintained.

**PATIENTS**
- SNOMED CT decreases the need to repeat health history.
- It plays an important part in medication reconciliation.
- Patients can be more proactive in managing their own health.

**PROVIDERS**
- SNOMED CT makes it easier for data to be portable from one system to another.
- Designed by clinicians for clinicians. Enables a unique partnership with technologists.
- Clinicians have the flexibility to record information in a language and in a level of detail they prefer.

**MEMBER COUNTRIES**
- SNOMED CT enables broad uses of information, including health system management, clinical program management, public health, and research.
- Richness of the information allows for proactive management of resources in the delivery of health care.
- Terminology use benefits the entire health system – savings of approximately 5% of total health care costs.
PANEL DISCUSSION: Q & A

Remote attendees: Type question in Lync or email to jim.maclean@nshealth.ca