



Lessons from SNOMED CT Studies by the UVic Health Terminology Group

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Nov 16, 2010 Partnership Conference

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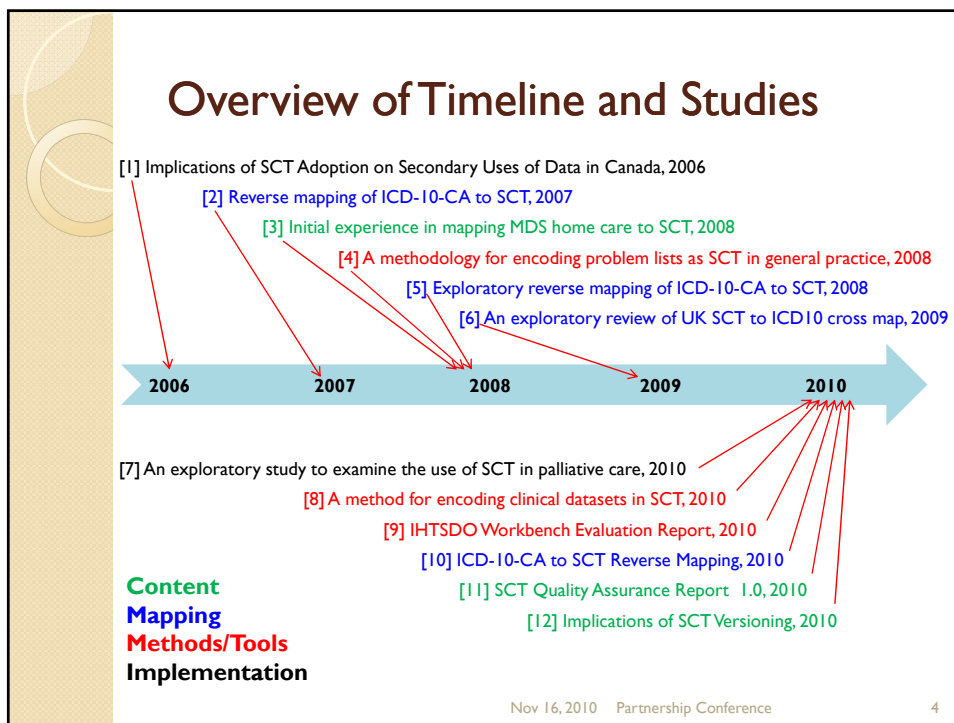
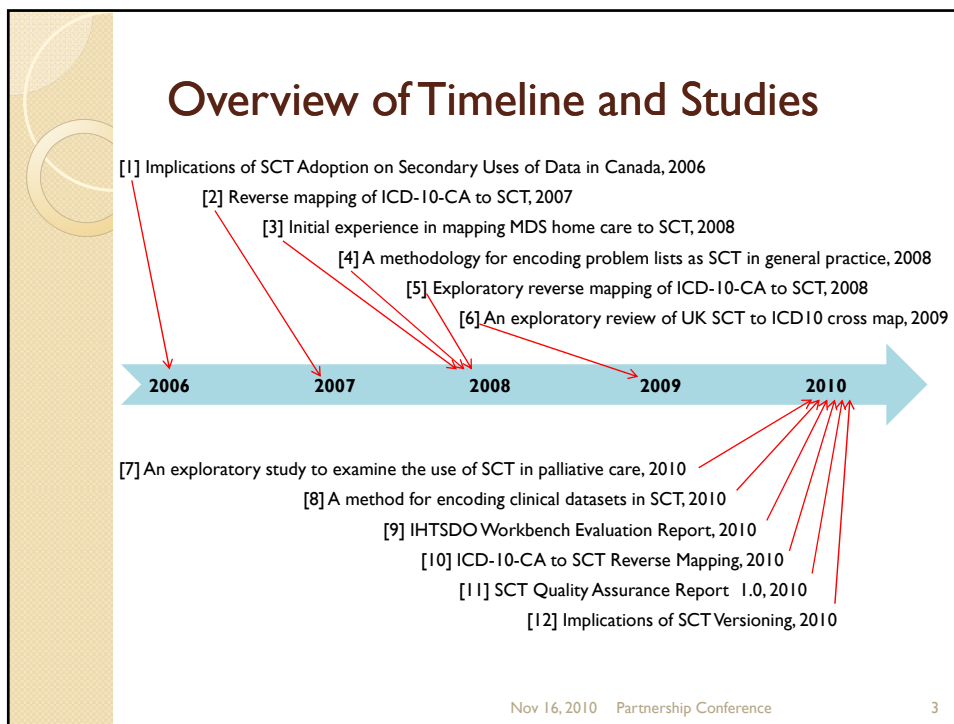


Lessons from SNOMED CT Studies by the UVic Health Terminology Group

- Overview of Timeline and Studies
- Summary of Selected Studies
- SNOMED CT Encoding Methodology
- SNOMED CT Versioning
- Lessons and Opportunities

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Summary of Selected Studies

- Implications of SCT on secondary use
- Mapping/Encoding MDS-HC to SCT
- SCT encoding methodology

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Implications of SCT on Secondary Use

- Internal report for CIHI, 2006
- Limited SCT/mapping experience, business case
- Complex, context specific, validation, few tools
- Coordination, facilitation, communication efforts
- Implementation decisions affect secondary use
- Jurisdictions – limited experience, 5yrs, ICD9/10
- NHS: SCT team ~20+ members, UK: 20+ experts and 100 knowledgeable individuals

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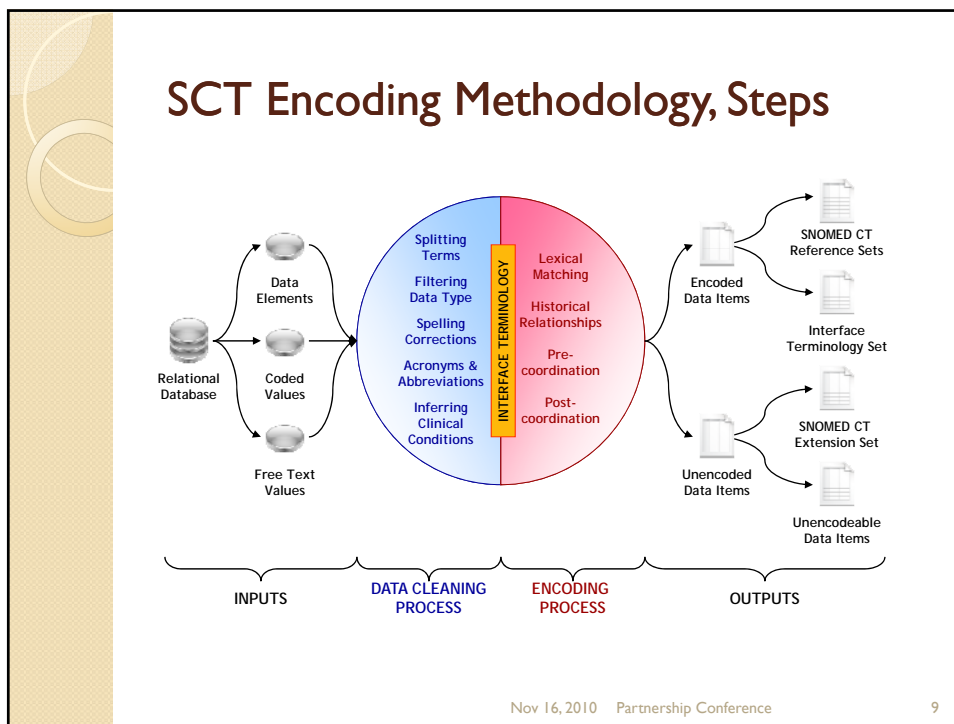
Mapping/Encoding MDS-HC to SCT

- International Resident Assessment Instrument (InterRAI) Network with 12+ instruments
- Minimum Data Set for Home Care (MDS-HC)
- Health condition/need screening, care planning, quality and outcome indicators
- 21 sections, 89 assessment items, 198 sub-items, 396 responses

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Mapping/Encoding MDS-HC to SCT

MDS-Home Care Canadian Version	SECTION B. COGNITIVE PATTERNS	
Section AA - Name and Identification information Section BB - Personal Items Section CC - Referral Items Section A - Assessment Information Section B - Cognitive Patterns Section C - Communication/Hearing patterns Section D - Vision Patterns Section E - Mood and Behaviour Patterns Section F - Social Functioning Section G - Informal Support Services Section H - Physical Functioning Section I - Continence in Last 7 Days Section J - Disease Diagnosis Section K - Health Conditions and Preventive Health Measures Section L - Nutrition/Hydration Status Section M - Dental Status Section N - Skin Condition Section O - Environmental Assessment Section P - Service Utilization Section Q - Medications Section R - Assessment Information	1	MEMORY RECALL ABILITY <i>(Code for recall of what was learned or known)</i> 0. Memory OK 1. Memory problem
		a. Short-term memory OK - seems/appears to recall after 5 minutes <input type="checkbox"/>
		b. Procedural memory OK - can perform all or almost all steps in a multitask sequence without cues for initiation <input type="checkbox"/>
		a. How well client made decisions about organizing the day (e.g. when to get up or have meals, which clothes to wear or activities to do) 0. INDEPENDENT -Decisions consistent/reasonable/safe 1. MODIFIED INDEPENDENCE-Some difficulty in new situations only 2. MINIMALLY IMPAIRED-In specific situations, decisions become poor or unsafe and cues/supervisions necessary at those times 3. MODERATELY IMPAIRED-Decisions consistently poor or unsafe, cues/supervision required at all times 4. SEVERELY IMPAIRED-Never/rarely made decisions <input type="checkbox"/>
		b. Worsening of decision making as compared to status of 90 DAYS AGO (or since last assessment if less than 90 days) 0. No 1. Yes <input type="checkbox"/>



Step 1: Inputs

The screenshot shows a 'CASE DETAIL' window with patient information for 'JOHN DOE'. The 'Diagnosis' field is set to 'HEADACHE' and 'ADMISSION'. A 'Problem At Referral' is 'DYSPOEA' and the 'Admission Info' is 'COMPLAIN OF FATIGUE'. A 'Referral Information' window shows 'Ref From Loc' as 'HOME COMMUNITY' and 'Ref From Date' as '08 JUN 2007'.

An 'Untitled - Notepad' window displays a list of codes and descriptions:

Code	Description	Frequency
47	flu vaccine	607
61	study visit	475
62	Pegasys Therapy	473
63	Mental Illness	453
64	cellulitis	452
65	well woman	445
66	knee pain	440
70	Diarrhea	399
93	Weight Loss	295
95	Constipation	294

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Step 2: Data Cleaning

Potential Data Items

Splitting Data Items into Atomic Concepts

Filtering Unusable Data Types

Correcting Spelling Mistakes

Extending Acronyms & Abbreviations

Inferring Clinical Context

Interface Terminology

Split terms

Abbreviations

Acronyms

Spelling

Dates

Private Information

Ca (I) lung (small cell) June 2003

Filter off "June 2003"

"Ca" → "carcinoma"; "I" → "left"

Small cell carcinoma of left lung

Ca (I) lung (small cell) June 2003, Brain, Bone mets

Bran

"Bran" → "Brain"

"metastasi" → "metastasis"

Brain metastasis

Bone mets

"metst" → "metastasis"

Bone metastasis

MyTerminology Query Batch

MyTerminology: **Wulf**

Description: Problems and assessments extracted from the Wulf List at the Carol Ann Clinic.

Clinical Terminology: Local Terms / Non-Standard Vocabulary / Others

Query Options:

- MyTerms Is Encoded
- MyTerms Is Cleaned
- MyTerms Contains Abbreviations
- MyTerms Contains Spelling Mistakes
- MyTerms Contains Private Information
- MyTerms Contains Line Breaks
- MyTerms Contains Extra Spaces
- MyTerms Is Unencoded
- MyTerms Is Not Cleaned
- MyTerms Contains Acronyms
- MyTerms Contains Date/Time
- MyTerms Contains Multiple Terms
- MyTerms Contains the Word "and"

Sort By:

- Description
- Frequency

Query Results

No.	Original / Clean	Frq	Sp	Ab	Ac	St	DT	Pr	Cl	Sev	Del	Enc	No.
41	general counselling	474											41
42	Depression Anxiety Disorder	477											42
43	Pain Chronic	475											43
44	Back Pain Chronic	438											44
45	Alcohol Abuse	426											45
46	Gastroesophageal Reflux (GER)	418											46
47	Pa Vaccine	407											47
48	Back Pain Lumbar Chronic	398											48
49	Diabetes Mellitus Insulin Dependent	391											49
50	subtreach	355											50

Step 3: Encoding

Lexical Matching (Batch Mode)

Match Found?

NO → Lexical Matching (Manual Mode)

YES → Concept Active?

NO → Search Historical Relationships

YES → Concept Active?

NO → Post-Coordination

YES → Pre- Coordinated Concept

NO → Match Found?

NO → Unencoded

YES → Post- Coordinated Expression

Pre-coordination Post-coordination

Search Criteria: Alcohol Abuse

Search

Search Results:

No.	CT	UNENCODED CT Description(s)	LC	ENCODED CT
1	2570014	Alcohol abuse	NE	
2	253419192	Excessive alcohol abuse	NE	
3	2952010	Alcohol abuse, continuous	NE	
4	279062193	Alcohol abuse cessation behavior	NE	
5	347276015	Trench alcohol abuse prevention	NE	
6	283278197	Suspected alcohol abuse (abstinence)	NE	
7	279191911	Alcohol abuse cessation behavior (observable entity)	NE	
8	4771901544	Alcohol abuse	NE	
9	157627017	Alcohol abuse	NE	

MyVTE Expression Builder V2 (beta)

Expression Builder

Expression: 2952010(Chest pain (finding)) 34376017(Finding site (attribute)) 31872008(Right thorax structure (body structure))

Expression Attribute/Concept:

- Chest pain
- Finding site - Right thorax structure

Search Terms: 2952010(Chest pain)

Add Modifier: Chest pain

Common Context: Please select...

Qualification / Refinement / Context:

Causative agent: [+]

Finding information: [+]

Finding method: [+]

Finding site: 31872008(Right thorax str)

Has definitional modification: [+]

Interventions: [+]

Browse Range:

- Musculoskeletal structure of th...
- Nervous structure of thorax
- Physical loc structure
- Structure of head, chest, exteri...
- Structure of half of thorax later...
- Left thorax structure
- Right thorax structure
- Structure of half of thorax + s...
- Structure of infrasternal angle
- Structure of mammary region

Related Concepts:

No Equivalent Pre- Coordinated Concepts

Step 4: Outputs

MyTerminology

Terminology Information

MyTerminology	Wolf
Description	Problems and assessments extracted from the Wolf FMR at the Cool Aid Clinic.
Clinical Terminology	Local Terms / Non-Standard Vocabulary / Others

Export

No	Export
<input type="radio"/>	Original Terms
<input type="radio"/>	Cleaned Terms
<input type="radio"/>	Unencoded Terms
<input type="radio"/>	Interface Terminology
<input checked="" type="radio"/>	SNOMED CT RefSet (Descriptor + Simple Map)

Results

No	Event	Description
	SNOMED CT RefSet Descriptor	Click here to download the RefSet Descriptor file.
	SNOMED CT RefSet Simple Map	Click here to download the RefSet Simple Map file.

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SNOMED CT Versioning

- Pre-coordinated Concept Available
- Fully-specified Name
- Preferred Term
- Concept and Description Status
- IsPrimitive
- Defining Attributes
- Long Normal Form
- Hierarchy
- Supertypes
- Subtypes
- Concept Model

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SNOMED CT Versioning Implications

- Inactive concepts
- Descriptions
- Concept model and post-coordination
- Patient case queries

Lessons and Opportunities

- Experimentation – content, mapping, tools, front/back-end implementation, others?
- Strategy, infrastructure, expertise, policy
- Linking clinical value, health system use
- Opportunity to review data dictionary, work/information flows, strategy, policy
- Opportunity to leverage existing systems, e.g. MDS, clinical documents, EMR

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