

Joint effort to map SNOMED CT to interRAI

October 28th 2016

*Arabella D'Havé - Federal Public Service of
Health, Food Chain Safety and Environment, Belgium*

*Andrew Downes - interRAI software service manager
New Zealand*

Delivering

SNOMED CT

The global
language of
healthcare

Outline of presentation

- What is interRAI
- interRAI in Belgium and New Zealand
- Why map interRAI and SNOMED
- Mapping approach
- High level results thus far
- Potential opportunities

Who are interRAI?

- interRAI (www.interRAI.org) is a not for profit collaborative network of 60 researchers and health/social service professionals in over 30 countries
- Their goal is to promote evidence-based clinical practice and policy decisions through the collection and interpretation of high quality data about the characteristics and outcomes of persons served across a variety of health and social services settings.

interRAI assessment and care planning methodology

- Comprehensive geriatric assessment (CGA) instruments
- Designed for a range of clinical services across multiple care settings
- Develop an overall plan for treatment and long-term follow-up based on a common set of evidenced based items
- Used globally with implementations in 30 countries

Single assessment framework across health sector

80% of items common across the suite:

- Contact Assessment (screener assessment)
- ED assessments
- Home Care
- Long Term Care Facility
- Palliative Care
- Acute Care
- Post Acute Care
- Community Mental Health
- Mental Health Care
- Assisted Living
- Quality of life

....unique underlying assessment codes 'icodes'...

Assessment domains (home care example)

A. Identification Information	✓ complete	L. Skin Condition	✓ complete
B. Intake and Initial History	✓ complete	M. Medications	✓ complete
C. Cognition	✓ complete	N. Treatments and Procedures	✓ complete
D. Communication and Vision	✓ complete	O. Responsibility and Directives	✓ complete
E. Mood And Behaviour	✓ complete	P. Social Supports	✓ complete
F. Psychosocial well being	✓ complete	Q. Environmental Assessment	✓ complete
G. Functional Status	✓ complete	R. Discharge Potential and Overall Status	✓ complete
H. Continence	✓ complete	S. Discharge - Complete at Discharge Only	✓ complete
I. Disease Diagnoses	✓ complete	Assessment Summary	✓ complete
J. Health Conditions	✓ complete	T. Assessment Information	
K. Oral and Nutritional Status	✓ complete		

Assessment domains

further details/coding - eg cognition

1	COGNITIVE SKILLS FOR DAILY DECISION MAKING	Making decisions regarding tasks of daily life—e.g., when to get up or have meals, which clothes to wear or activities to do <ul style="list-style-type: none"><input checked="" type="radio"/> 0. Independent—Decisions consistent, reasonable, and safe<input type="radio"/> 1. Modified independence—Some difficulty in new situations only<input type="radio"/> 2. Minimally impaired—In specific recurring situations, decisions become poor or unsafe; cues/supervision necessary at those times<input type="radio"/> 3. Moderately impaired—Decisions consistently poor or unsafe; cues / supervision required at all times<input type="radio"/> 4. Severely impaired—Never or rarely makes decisions<input type="radio"/> 5. No discernable consciousness, coma [Skip to Section G]
---	--	---

5	CHANGE IN DECISION MAKING	As compared to 90 days ago (or since last assessment if less than 90 days ago) <ul style="list-style-type: none"><input type="radio"/> 0. Improved<input checked="" type="radio"/> 1. No change<input type="radio"/> 2. Declined<input type="radio"/> 8. Uncertain
---	---------------------------	---

Multiple applications as by product of assessment










Examples of interRAI uses

Clinical – care planning, prioritisation, risk management, quality initiatives...

- Triggered CAPs - Institutional risk
 - 20 assessment items - if triggered then 40- 50% chance of admission to residential care in 12 months
- Outcome scores – **CHES** (**C**hanges in **H**ealth, **E**nd-Stage Disease, **S**igns, and **S**ymptoms)
 - 11 assessment items – higher scores highly predictive of mortality within 12 months
- Risk scores – **MAPLe** (**M**ethod for **A**ssigning **P**riority **L**evels)
 - 17 assessment items + 1 CAP and 2 outcome measures - 40-50% of those with higher scores likely to be admitted to residential care within one year. Highly correlated with carer stress

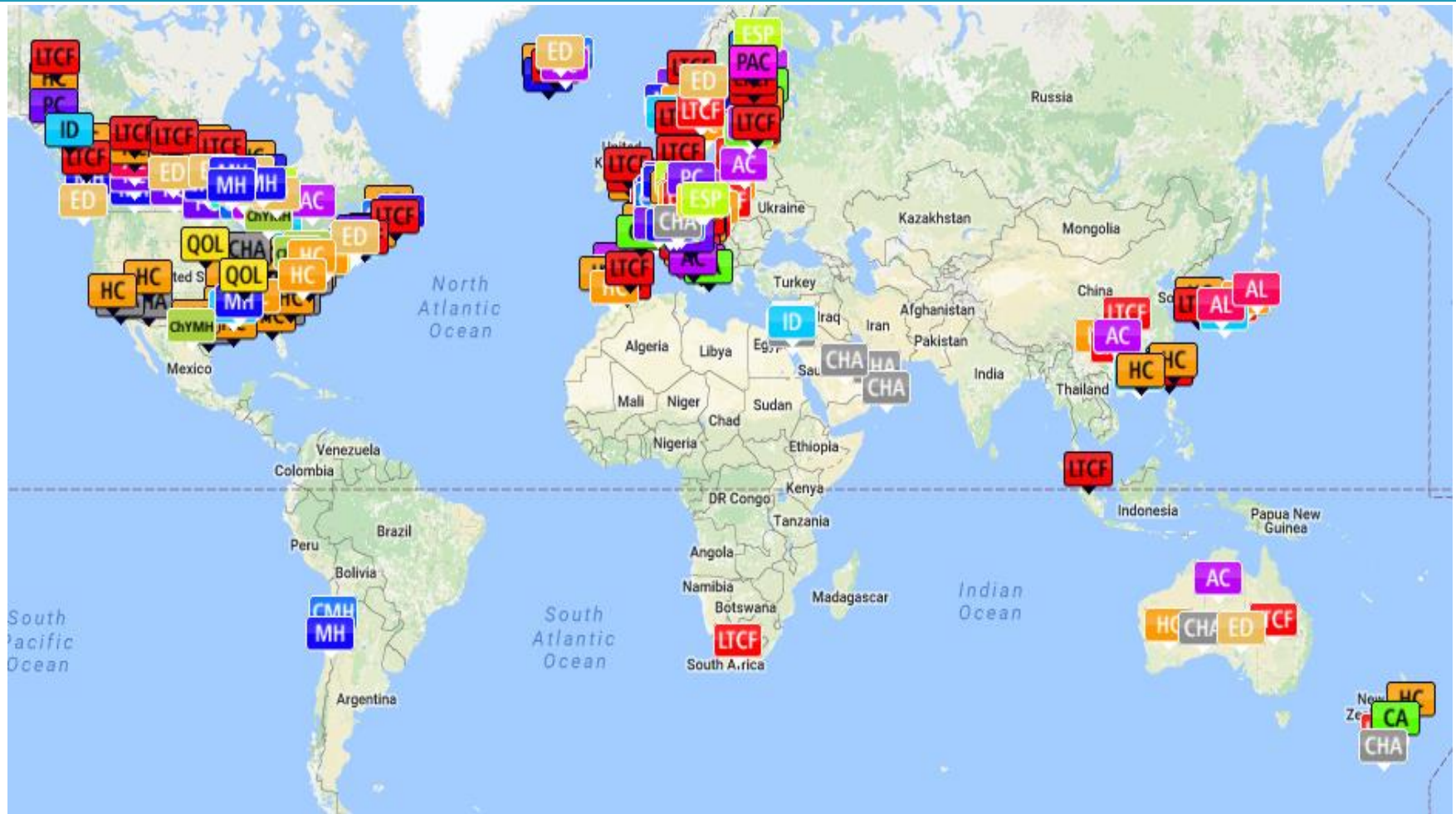
interRAI – Belgium & NZ

	Belgium	New Zealand
Web based national system		
Accessible across continuum of care		
Inception of national system	2008	2008
national training/competency		
Volumes	circa 200,000	 circa 0.5M
Interoperability	...coming...	(HL7-CDA)

interRAI – Belgium & NZ

	Belgium	New Zealand
Contact assessment	n/a	live
Emergency dept screener	n/a	live
Community health assessment	n/a	live
Home care	live	live
Long term care	live	live
Palliative care	live	Piloted - likely roll out
Acute care	live	likely next pilot area
Post acute care	n/a	n/a
Community Mental Health	n/a	n/a
Emergency Screener for Psychiatry	n/a	n/a
Mental health	n/a	n/a
Assisted living	n/a	n/a
Intellectual disability	n/a	n/a
Children & Youth Mental Health	n/a	n/a
Quality of life	n/a	n/a

interRAI use globally...



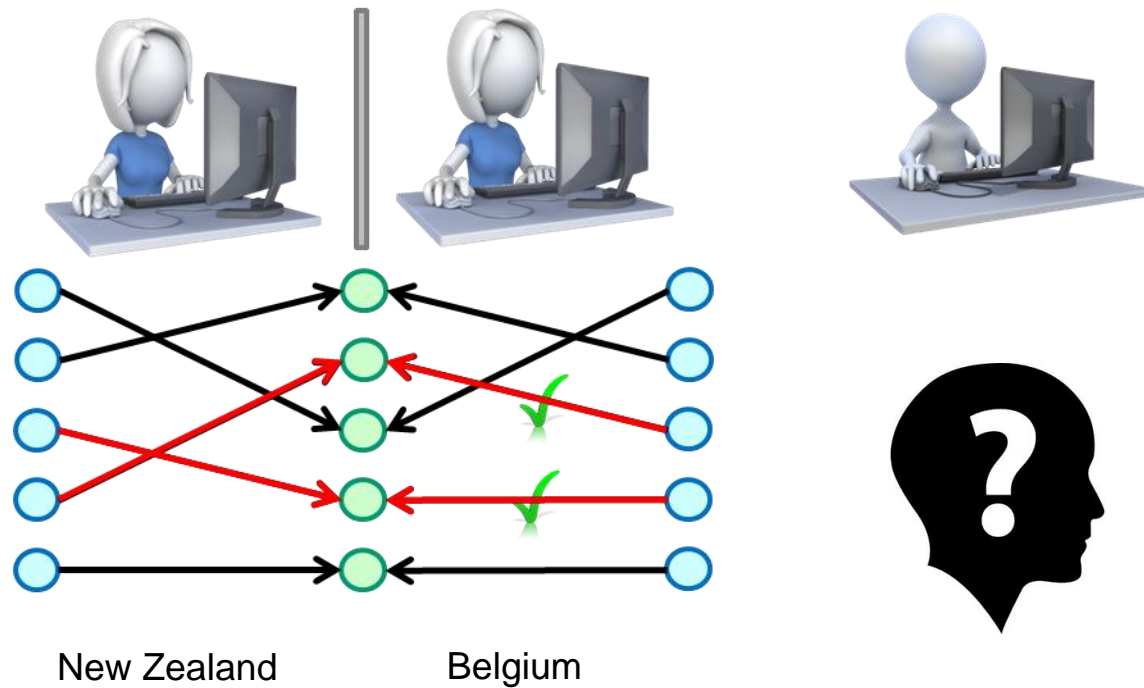
...millions of assessments...

interRAI to SNOMED mapping – why bother?

- Strengthen
 - Common language, understanding and consistency across health care settings
- Support
 - Common coding
 - Interoperability across systems - NZ uses HL7-CDA using unique interRAI icodes – future ability to add in SNOMED codes (?)
- **interRAI mapping project:**
 - Examine the conceptual relationship between the SNOMED CT and interRAI
 - Determining the feasibility of SNOMED CT to (semi)-automatically generate the items of the interRAI assessments

Method

- Dual blind mapping with adjudicator
- Using the interRAI icodes



Results

- The dual blind mappings are accomplished.
 - One-to-one mappings as well as one-to-many have been constructed.
 - 48.13% mappings are 1-1
 - 49.14% mappings are N-1
 - 2.73% were unmappable at this stage.
- Further work is required by adjudicator
 - Partial absence of the semantic meaning of interRAI concepts while performing the dual blind mapping
- Understanding conceptual overlaps/gaps

Potential opportunities

- Mapping of interRAI assessment items/concepts to SNOMED CT and vice versa does appear to offer complimentary opportunities for both systems to support depth and breadth of uptake globally. This study is a first **tentative** step in this area
- Strengthening clinical assessment language and concepts and clinical terminology
- Encourage collaboration between IHTSDO and interRAI collaborative

Articles of interest

Devriendt, E., Wellens, N. I. H., Flamaing, J., Declercq, A., Moons, P., Boonen, S., & Milisen, K. (2013). The interRAI Acute Care instrument incorporated in an eHealth system for standardized and web-based geriatric assessment: strengths, weaknesses, opportunities and threats in the acute hospital setting. *BMC Geriatrics*, 13, 90

John P Hirdes, Gunnar Ljunggren, John N Morris, Dinnus HM Frijters, Harriet Finne Soveri, Len Gray, Magnus Björkgren and Reudi Gilgen. Reliability of the interRAI suite of assessment instruments: a 12-country study of an integrated health information system *BMC Health Services Research* 2008 8:277

Katherine Berg, Harriet Finne-Soveri, Len Gray, Jean Claude Henrard, John Hirdes, Naoki Ikegami, Gunnar Ljunggren, John N Morris, Louis Paquay, Linda Resnik and Gary Teare. Relationship between interRAI HC and the ICF: opportunity for operationalizing the ICF *BMC Health Services Research* 2009 9:47

Graziano Onder, Iain Carpenter, Harriet Finne-Soveri, Jacob Gindin, Dinnus Frijters, Jean Claude Henrard, Thorsten Nikolaus, Eva Topinkova, Matteo Tosato, Rosa Liperoti, Francesco Landi, Roberto Bernabei and the SHELTER project. Assessment of nursing home residents in Europe: the Services and Health for Elderly in Long TERM care (SHELTER) study *BMC Health Services Research* 2012 12:5

John P Hirdes, Jeff W Poss and Nancy Curtin-Telegdi. The Method for Assigning Priority Levels (MAPLe): A new decision-support system for allocating home care resources. *BMC Medicine* 2008 6:9