

IHTSDO/ICN Nursing Collaboration

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Delivering

SNOMED CT

The global
language of
healthcare

Presentation Objectives

- Describe the collaboration between the International Council of Nurses (ICN) and IHTSDO.
 - Agreed planned joint activities
 - Products: equivalency tables between SNOMED CT and ICNP and SNOMED CT subsets for Nursing Diagnoses (problems) and Nursing Interventions
- Illustrate how the mapping principles and lessons learned might apply to other clinical areas using concrete examples.
- Discuss lessons learned

ICN/IHTSDO new Collaboration Agreement

ICN and IHTSDO extend collaboration to advance harmonisation of health terminology

Geneva, Switzerland & Copenhagen, Denmark, 1 September 2014 – The International Council of Nurses (ICN) and the International Health Terminology Standards Development Organisation (IHTSDO) today announced an updated collaboration agreement to advance terminology harmonisation and foster interoperability in health information systems. The new collaboration agreement signed today will be reviewed on completion of the work or in April 2016, whichever is earliest.

The overarching goals of this collaboration are to ensure that nurses worldwide have the tools they need to carry out their jobs effectively, that they are not disenfranchised from the global informatics infrastructure, and that they remain active in the collection of meaningful and useful health information.

As part of the collaboration agreement, ICN, owner of the International Classification for Nursing Practice (ICNP), and IHTSDO, owner of SNOMED CT, have agreed to undertake further work that defines the relations between SNOMED CT and ICNP to enable their interoperability in health information systems globally. It builds on work already undertaken to produce an equivalence table for nursing diagnoses.

In the coming years IHTSDO and ICN will focus on two key areas of work: joint publication of a completed equivalence table between SNOMED CT and ICNP for Nursing Diagnoses, and joint publication of a completed equivalence table between SNOMED CT and ICNP for nursing interventions.

International Classification for Nursing Practice (ICNP®) – produced by ICN

- A standardised terminology used to represent nursing diagnoses, interventions and outcomes
- Available in 14 languages
- Formally modeled in OWL, using automated reasoning to support development
 - A formal infrastructure facilitates mapping and allows output in multiple formats
- A related classification in the WHO Family of International Classifications
- Collaboration agreements in place with IHTSDO (SNOMED CT) and Sabacare Inc. (Clinical Care Classification)

Focus of the IHTSDO/ICN Agreement

- Nursing Diagnostic Concepts
 - Must be actual or potential (e.g. risk) and negative (e.g. impaired ability to manage medication) or positive (able to manage medication)
 - Map to Clinical Findings in SNOMED CT
- Nursing Intervention Concepts
 - ICNP Nursing Interventions are actions performed by the nurse.
 - Map to Procedures in SNOMED CT
- A publication of full equivalence tables will be produced jointly – ICNP to SNOMED CT
- IHTSDO will release related SNOMED CT subsets.

Method: Harmonizing Nursing Diagnoses/Problems

2011-2012 **ICN:** eHealth research team prepared equivalence table of 783 ICNP nursing diagnoses/outcomes to SNOMED CT

2013-2014 **IHTSDO:** Review and validation of ICN equivalence table for 540 ICNP nursing diagnoses/problems

- 407 (75%) equivalencies identified

Method: Harmonizing Nursing Diagnoses/Problems

- 2014 **ICN:** Submitted 133 requests into SIRS
- 2014-2015 **IHTSDO & ICN:** Anticipate approximately 128 new concepts in SNOMED CT Clinical Finding hierarchy, Jan 2015 release
- 2015 **ICN:** Equivalency table of ICNP nursing diagnoses/problems and SNOMED CT to be released in June 2015 (with new release of ICNP) along with SNOMED CT subset

Examples of points arising

- Inexact matches
- One-to-many matches
- Many-to-one matches
- Function and ability concepts

Inexact Matches between ICNP and SNOMED CT

- ICNP: 10023452 Able To Perform Health Maintenance
- SNOMED CT: 365232000 Finding related to ability to manage personal health care (finding)

- ICNP: 10027371 Lack of Knowledge Of Community Service
- SNOMED CT: 425209002 Unfamiliar with process for obtaining community services (finding)

One-to-many relations between ICNP and SNOMED CT

- ICNP: 10027290 Abnormal Weight
- SNOMED CT: 22495007 Abnormal weight (finding) & 301336003 Body weight problem (finding)

- ICNP: 10029716 Negative Behaviour
- SNOMED CT: 25786006 Abnormal behavior (finding) & 277843001 Problem behavior (finding)

Many-to-one relations between ICNP and SNOMED CT

- ICNP: 10039952 Helplessness & 10001578 Powerlessness
- SNOMED CT: 33300005 Feeling powerless (finding)

- ICNP: 10000607 Deficient Food Intake & 10025519 Impaired Low Nutritional Intake
- SNOMED CT: 88202002 Alteration in nutrition: less than body requirements (finding)

Mutual benefits to both ICNP & SNOMED CT

ICNP:

- Changed approximately 70 preferred terms (e.g., all of the Positive Ability to Able to)
- Moved abuse concepts to Victim Status (12 concepts total)
- Inactivated approximately 6 concepts (e.g. Spousal Abuse, Diabetic Wound, Negative Response to Medication). These concepts were redundant or ambiguous.
- Began identifying some ICNP concepts as Organizing Concepts (OC)

SNOMED CT:

- Addition of 128 new concepts to represent patient problems (or nursing diagnoses)
- Contribution to “Functioning and Activities” project and future outcomes work

Findings & Discussion

- Variations in lexical expressions for semantically equivalent concepts
- Semantic differences associated with the hierarchical structure
- Pre-coordination in ICNP v post-coordination in SNOMED CT
- Differences in content coverage
 - Scope and granularity
- Existence of ambiguity in both terminologies
- Equivalence table is based on ICNP as the source and SNOMED CT as target

Findings & Discussion

- Linkage to ICNP has facilitated an expansion of nursing-relevant concepts within SNOMED CT
- Gaps in SNOMED CT from nursing perspectives
 - 'Absence' Concepts
 - Positive diagnostic and outcome/goal statements
 - Need for harmonization rather than unification

What are the challenges?

- Terminologies created for different contexts
 - Nursing vs. Multidisciplinary
- Both fully defined in OWL with different properties
- Achieving a common understanding
 - e.g. Hierarchies, implied meaning
- Logistics of the new business working arrangements
 - Previously work was done with IHTSDO Nursing SIG and ICN
 - Now, IHTSDO/ICN directly working together IHTSDO editors directly advising and taking the outputs
 - IHTSDO Nursing SIG providing review and feedback, incorporating the international community
 - Detailed work plan linking with IHTSDO annual content development plans

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**QUESTIONS
OR
COMMENTS?**