GEVITY

Introduction to the International Classification for Nursing Practice (ICNP®)

Margie Kennedy, PhD, RN, CPHIMS-CA, Prosci®, PMP, P2P
Chief Nursing Informatics Officer
Managing Partner, Clinical Informatics
Gevity Consulting, Inc.

Informatics for a healthier world
Objectives

• Review nursing’s need for standardized languages and concept representation

• ICNP®
  – Evolution
  – Catalogues
  – ICNP Centres

• Canadian Projects

• ICNP Browser Demo
STANDARDIZED NURSING TERMINOLOGIES

Understanding our Need
What do we need and why?

• …without a language to express our concepts we cannot know whether our understanding of their meaning is the same, so we cannot communicate them with any precision to other people. (Clark¹, 1999, p.42)

• “…it is impossible for medicine, nursing, or any health care-related discipline to implement the use of [electronic documentation] without having a standardized language or vocabulary to describe key components of the care process.” (Rutherford², 2008)

Visibility vs Invisibility: The White Elephant

• Nursing, as a professional practice, is generally considered invisible in regards to formal and tangible recognition
  – Weyrauch, 2002; Norwood, 2001; Powers, 2001; CNA, 2000; Hannah, Ball, & Edwards, 1999; Clark, 1999; Colliere & Lawler, 1998; Conrick & Foster, 1997, Messias, Regev, Im, Spiers, et al. 1997; Marck, 1997; Clark & Lang, 1992

• Nurses cannot control what cannot be named
  – “if we cannot name it, we cannot control it, finance it, teach it, research it, or out it into public policy.” Clark & Lang (1992, p. 109)
Structured Languages

• Plural languages or local terminologies
• Diversity of expression, customization
• Risk of semantic loss or confusion/misinterpretation in transactions

• Standardized language
• Decreased variation/customization
• Increased semantic reliability
• Increased comparability of concepts
ICNP®
ICNP® Definition

• Formal terminology
• Provides a dictionary of terms and expressive relationships that nurses can use to describe and report their practice in a systematic way.
• The resulting information is used reliably to support care and effective decision-making, and inform nursing education, research and health policy.
• ICNP® “provides a unifying language system into which existing nursing terminologies can be cross-mapped. The ICNP® can enable comparison of nursing data collected using other recognized nursing vocabularies and classifications”
Benefits of ICNP®

- Establishes an international standard to facilitate description and comparison of nursing practice
- Serves as a unifying nursing language system for international nursing
- Represents nursing concepts used in local, regional, national and international practice, across specialties, languages and cultures
- Generates information about nursing practice that will influence decision-making, education and policy in the areas of patient needs, nursing interventions, health outcomes, and resource utilization
- Facilitates the development of nursing data sets used in research to direct policy by describing and comparing nursing care of individuals, families and communities worldwide
- Improves communication within the discipline of nursing and across other disciplines
ICNP® Evolution

- **1989** Proposal to ICN to develop an international classification
- **1995** Alpha version
  - Human needs, nursing actions, outcomes
- **1999/2001** Beta & Beta 2
  - 2 multi-axial models – nursing phenomena & nursing actions
- **2005** Version 1
  - Significant revision from classification to terminology
  - Developed with formal modeling rules using OWL
  - Adherence to ISO TS17117:2002 Health informatics - Controlled health terminology - Structure and high-level indicators
  - Single 7 axis model
- **2008** Version 1.1
  - New concepts, browser, and first catalogue of pre-coordinated statements
  - 376 new concepts added
- **2009** Version 2
  - 400+ new concepts (Dx/interventions for new catalogues
  - C-Space and new Version 2 browser
- **2011** Release
- **2013** Release
- **2015** Release launched at the ICN conference in Seoul
  - Available in CSV, PDF, and web ontology language (OWL)
The 7 Axes of ICNP®

- Client
- Focus
- Location
- Judgement
- Time
- Means
- Action
ICNP® Elements

• **Nursing Diagnoses and Nursing-Sensitive Patient Outcomes**
  – Include pre-coordinated concepts representing the client’s condition.
  – Examples of diagnoses include: “acute pain”, “lack of transportation” or “parental stress”.
  – Patient outcome examples include: “no pain”, “ability to prepare meals”, “urinary continence” and “improved nutritional status”.
  – Nursing diagnoses and patient outcomes can also be used to identify patient goals.

• **Nursing Interventions**
  – Include pre-coordinated concepts representing therapeutic activities of nurses.
  – Examples include: “Assess attitude toward treatment regime”, “collaborate in initiating patient controlled analgesia”, “Teach about managing pain”, “teach family about delirium”.

Informatics for a healthier world
Progressing from diagnosis to outcomes

Initial Assessment

1st Nursing Diagnosis

Nursing Interventions

OUTCOME: 2nd Nursing Diagnosis

Nursing Interventions

OUTCOME: 3rd Nursing Diagnosis

Outcome evaluation

Outcome evaluation

Informatics for a healthier world
ICNP® recognized by Canada

- Formally recognized and recommended by the Canadian Nurses Association as the nursing language in Canada
ICNP® CATALOGUES
ICNP® Catalogues

• Clinically relevant sub-sets of the entire terminology
• Designed to foster ICNP® use at POS and EHR
• Enables domain specific progression to contribute to specialty practice and entire terminology
• Iterative, expert development & validation
• Nursing diagnosis, interventions, and outcomes
• Growing every year
  – 7 currently approved and released
  – 5 in progress
### Concept Type | Concept Categories | Code | ICNP Statement (2015 Release)
--- | --- | --- | ---
Distorted Thinking Process | 10000669 | 10022500: Hallucination
Impaired Cognition | 10002321: Impaired Hearing
Impaired Memory | 10001203: Impaired Mobility
Impaired Musculoskeletal System Function | 10002642: Impaired Sense Of Smell
Impaired Sense Of Taste | 10022814: Impaired Taste
Impaired Tactile Perception | 10022619: Impaired Vision
Impaired Vision | 10022748: Impaired Vision
Latex Allergy | 10000790: Medication Side Effect
Medication Side Effect | 10022626: Paralysis
Paralysis | 10022674: Paralysis
Sensory Deficit | 10022730: Sensory Deficit
Tremor | 10022846: Tremor
Weakeness | 10022880: Weakeness

### Sociocultural and Environmental Aspect
Able To Adjust | 10021828: Caregiver Stress
Caregiver Stress | 10022397: Conflicting Cultural Beliefs
Conflicting Cultural Beliefs | 10022435: Conflicting Family Attitude
Conflicting Family Attitude | 10022384: Crime
Crime | 10034770: Effective Family Coping
# Community Nursing

**International Classification for Nursing Practice (ICNP®) Catalogue**

<table>
<thead>
<tr>
<th>Concept Type</th>
<th>Nursing Categories</th>
<th>Code</th>
<th>ICNP Statement (2015 Release)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>10022473</td>
<td>Lack Of Family Support</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10022733</td>
<td>Lack Of Social Support</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10035744</td>
<td>Relationship Problem</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10032364</td>
<td>Risk For Impaired Family Coping</td>
</tr>
<tr>
<td>Health Promotion</td>
<td></td>
<td>10023432</td>
<td>Able To Perform Health Maintenance</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10030214</td>
<td>Adherence To Safety Precautions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10022324</td>
<td>Alcohol Abuse</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10022554</td>
<td>Altered Blood Pressure</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10022423</td>
<td>Drug Abuse</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10028187</td>
<td>Effective Sexual Behaviour</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10022592</td>
<td>Impaired Ability To Manage Dietary Regime</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10022603</td>
<td>Impaired Ability To Manage Exercise Regime</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10029643</td>
<td>Impaired Ability To Perform Oral Hygiene</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10000918</td>
<td>Impaired Health Maintenance</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10022748</td>
<td>Impaired Vision</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10022583</td>
<td>Lack Of Knowledge About Exercise Regime</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10021939</td>
<td>Lack Of Knowledge Of Dietary Regime</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10029970</td>
<td>Lack Of Knowledge Of Oral Hygiene</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10029991</td>
<td>Lack Of Knowledge Of Sexual Behaviour</td>
</tr>
</tbody>
</table>

**Informatics for a healthier world**
The statements were organised into a framework by the disaster nursing group involved with development of this catalogue. Physiological, psychological, social, and environmental needs of patients and families are addressed in this framework. The framework categories include: Cardiovascular, Caregiver/Care Process, Cognitive, Communication, Death and Dying, Fluid Balance/Nutrition, Integument, Medication Management, Metabolic/Thermoregulatory, Musculoskeletal, Neurological, Pain, Psychological, Respiratory, Safety/Mitigation, Social/Environmental, and Trauma.

<table>
<thead>
<tr>
<th>Concept Type</th>
<th>Nursing Categories</th>
<th>Code</th>
<th>ICNP Statement (2015 Release)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnoses and Outcomes</td>
<td>Trauma</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>10027668</td>
<td>Improved Response To Rape Trauma</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10027760</td>
<td>Improved Response To Trauma</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10029936</td>
<td>Injury</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10001699</td>
<td>Post Trauma Response</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10032291</td>
<td>Risk For Anaphylaxis</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10017268</td>
<td>Risk For Haemorrhaging</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10015146</td>
<td>Risk For Injury</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10013259</td>
<td>Risk For Post Trauma Response</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10013360</td>
<td>Risk For Trauma</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10030088</td>
<td>Traumatic Wound</td>
</tr>
</tbody>
</table>

Informatics for a healthier world
# Nursing Care of Children with HIV and AIDS

## International Classification for Nursing Practice (ICNP®) Catalogue

<table>
<thead>
<tr>
<th>Concept Type</th>
<th>Nursing Categories</th>
<th>Code</th>
<th>ICNP Statement (2015 Release)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnoses and Outcomes</td>
<td>End of Life</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10021737</td>
<td>Conflicting Religious Belief</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10000379</td>
<td>Decisional Conflict</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10023066</td>
<td>Discomfort</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10038482</td>
<td>Family Grief</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10037823</td>
<td>Fear About Abandonment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10037921</td>
<td>Fear About Contagion</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10037834</td>
<td>Fear About Death</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10029860</td>
<td>Financial Problem</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10022345</td>
<td>Grief</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10000742</td>
<td>Hopelessness</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10023130</td>
<td>Pain</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10038493</td>
<td>Risk For Dysfunctional Family Grief</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10037847</td>
<td>Thirst</td>
<td></td>
</tr>
<tr>
<td>Health Maintenance</td>
<td>10029272</td>
<td>Ability To Manage Medication Regime</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10037593</td>
<td>Chronic Fever</td>
<td></td>
</tr>
</tbody>
</table>
NURSING OUTCOME INDICATORS

International Classification for Nursing Practice (ICNP®) Catalogue

INTERNATIONAL COUNCIL OF NURSES
ADVANCING NURSING AND HEALTH WORLDWIDE

Informatics for a healthier world
# PALLIATIVE CARE FOR DIGNIFIED DYING

## International Classification for Nursing Practice (ICNP®) Catalogue

### Diagnoses and Outcomes

<table>
<thead>
<tr>
<th>Concept</th>
<th>Nursing Categories</th>
<th>Sub-categories</th>
<th>Code</th>
<th>ICNP Statement (2015 Release)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dignity-Conserving Repertoire</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acceptance</td>
<td></td>
<td></td>
<td>10029480</td>
<td>Impaired Acceptance Of Health Status</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10000863</td>
<td>Impaired Adjustment</td>
</tr>
<tr>
<td>Autonomy and Control</td>
<td></td>
<td></td>
<td>10000579</td>
<td>Decisinal Conflict</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10027120</td>
<td>Decreased Powerlessness</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10027131</td>
<td>Low Self Efficacy</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10001578</td>
<td>Powerlessness</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>100235672</td>
<td>Self Efficacy</td>
</tr>
<tr>
<td>Continuity of Self</td>
<td></td>
<td></td>
<td>10001079</td>
<td>Disturbed Body Image</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10001237</td>
<td>Disturbed Personal Identity</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10023564</td>
<td>Positive Personal Identity</td>
</tr>
<tr>
<td>Finding Spiritual Comfort</td>
<td></td>
<td></td>
<td>10021173</td>
<td>Conflicting Religious Belief</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>100221769</td>
<td>Conflicting Spiritual Belief</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10027149</td>
<td>Decreased Spiritual Distress</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10028529</td>
<td>Effective Spiritual Status</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10001652</td>
<td>Spiritual Distress</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10023588</td>
<td>Suffering</td>
</tr>
<tr>
<td>Hopefulness and Generativity</td>
<td></td>
<td></td>
<td>10023780</td>
<td>Hope</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10000742</td>
<td>Hopelessness</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10023423</td>
<td>Lack Of Meaning</td>
</tr>
<tr>
<td>Living in the Moment</td>
<td></td>
<td></td>
<td>10040367</td>
<td>Able To Perform Leisure Activity</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10041017</td>
<td>Death Anxiety</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10040331</td>
<td>Impaired Ability To Perform Leisure Activity</td>
</tr>
</tbody>
</table>

Informatics for a healthier world
ICNP® IMPLEMENTATION
Who is Using ICNP®?

• Canada – C-HOBIC
• Norway - ACOS
• Portugal
  – Alert – broad HIS
  – Glintt – broad HIS + education
  – HP Healthcare Information System (EDIS, IM/Out patient, OR & ODS)
• Brazil – Grupo
• Germany/USA – Siemens Soarian
ICNP® Translations

- Brazilian Portuguese (2013)
- Chinese (2013)
- Chinese Traditional (2013)
- English (2015)
- Farsi/Persian (V2)
- French (2013)*
- German (2011)
- Icelandic (2011 in development)
- Indonesian (v1.1)
- Italian (2015)
- Japanese (V1.0)
- Korean (2013)
- Norwegian (2013)
- Polish (2013)
- Portuguese (2013)
- Romanian (V2)
- Spanish (2015)
- Swedish (2013)
ICNP® Research & Development Centers
ICN Centers for ICNP Research & Development

- 12 centers internationally
- 2 Canadian
  - French Canadian Research & Development Centre for ICNP
  - RNAO-ICNP Research And Development Centre
CANADIAN ICNP® PROJECTS
Pioneering work in ICNP®

• Liz Lowen (1999) - MN
  – tested ICNP® in community-based nursing practice (public health) for MN thesis

• Margie Kennedy (2005) - PhD
  – tested ICNP® across 4 practice domains with 1500 data elements for PhD dissertation

• Fahim Imam (2009) - MSc
  – explored ICNP® and SNOMED CT in regards to merging and data loss for Master’s thesis

• Adrienne Lewis (2015) - MN
  – is exploring ICNP® in her research “Documenting Nursing Practice” through the University of Victoria
FRENCH CANADIAN CENTRE FOR ICNP® R&D
French Canadian ICNP® Center

• Hosted at University of Sherbrooke School of Nursing
  – Director Sylvie Jette
• Accredited Fall 2014
• Representation from School of Nursing, MN students, Canadian Nurses Association, QC practice-based nurses, Infoway, provincial nursing association, and international Francophone nursing association
Priority Work Agenda

1. Finalize validation of the French Canadian translation
   - V3 completed July 2015
   - V4 ready end of Sept 2015
   - V5 will include 600 new terms

2. Finalize Catalogue on Adult Pain

3. Contribute to ICNP® integration in systems
   - Currently working on simulation solution and actively generating feedback from students

4. Publications and knowledge translation
ICNP
10004999
## Plan de soins et de traitements infirmiers

**ICNP 10004999**

<table>
<thead>
<tr>
<th>Date</th>
<th>Problèmes infirmiers</th>
<th>Interventions</th>
<th>Fréquence</th>
<th>Date</th>
<th>Statut</th>
<th>Initiales</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015-09-08</td>
<td>Constipation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. **ICNP 10040834**
   - **Interventions**
   - **Collaborer avec le nutritionniste**

2. **ICNP 10040435**
   - **Interventions**
   - **Promouvoir l'exercice**

*Copyright © 2015 Menya Solutions*
RNAO-ICNP® R&D
RNAO – ICNP® Activity

- **3 Objectives**
  - map all of RNAO’s clinical BPGs to ICNP (currently 42 publications) and disseminating these as ICNP-encoded nursing order sets,
  - map the process and outcome indicators for these BPGs to ICNP, and
  - actively promote the adoption of these ICNP-encoded products among our Best Practice Spotlight Organizations and support their use of ICNP to extract outcome data to evaluate the impact of implementing the BPGs

- **Successfully mapped 12 of their 42 BPGs**
  - Chronic diseases, women & children, addictions & mental health, elder care, person & family centered care

- **Hoping for a future demonstration project**


## BPGs Currently Mapped

<table>
<thead>
<tr>
<th>Category</th>
<th>BPGs with ICNP-Encoded Nursing Order Sets</th>
</tr>
</thead>
</table>
| Chronic Diseases          | • Risk Assessment and Prevention of Pressure Ulcers  
                          | • Assessment and Management of Stage I to IV Pressure Ulcers  
                          | • Ostomy Care and Management  
                          | • Reducing Foot Complications for People with Diabetes  
                          | • Assessment and Management of Foot Ulcers for People with Diabetes  
                          | • Assessment and Management of Pain  
                          | • Management of Hypertension |
| Women & Children          | • Breastfeeding |
| Addictions & Mental Health| • Smoking Cessation |
| Elder Care                | • Prevention of Falls and Fall Injuries in the Older Adult  
                          | • Oral Health Nursing Assessment and Interventions |
| General                   | • Client-Centred Care |
RNAO Mapping Methodology

- Develop Nursing Order Sets from BPGs
- Validation of Nursing Order Sets by Working Group
- Map Nursing Order Sets to ICNP
- Validation by ICN Terminology Developers
- Dissemination of ICNP-Encoded Nursing Order Sets
C-HOBIC

ICNP® Coding
Mapping to SNOMED CT
C-HOBIC

• Standardized patient-centred clinical outcomes reflective of nursing practice with valid and reliable measures in four categories:

  • Functional status & continence
  • Symptoms: pain, nausea, fatigue, dyspnea
  • Safety outcomes: falls, pressure ulcers
  • Therapeutic self-care (readiness for discharge)
C-HOBIC Objectives

• Capture nurse-sensitive, patient-centred, clinical outcomes data across 4 sectors of the health system
  – Acute Care, Complex Continuing Care, Long-term Care And Home Care

• Standardize the concepts used by HOBIC to the standardized clinical reference terminology of nursing, the International Classification for Nursing Practice (ICNP®) and SNOMED CT

• Store captured and standardized data in relevant secure jurisdictional data repositories/databases in preparation for entry into provincial electronic health records and analytics supporting clinical practice
## C-HOBIC MEASURES

<table>
<thead>
<tr>
<th>Category</th>
<th>AC</th>
<th>CCC</th>
<th>LTC</th>
<th>HC</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Functional Status (ADL &amp; IADL)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Bathing</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>- Personal</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>- Walking</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>- Toilet Transfer</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>- Toilet Use</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>- Bed Mobility</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>- Locomotion on unit</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>- Locomotion off unit</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>- Locomotion in home</td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>- Locomotion outside of home</td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>- Dressing</td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>- Eating</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>- Bladder Continence</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>- Meal preparation</td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>- Ordinary Housework</td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>- Managing</td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td><strong>Pain - Frequency</strong></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Pain - Intensity</strong></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Fatigue</strong></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Dyspnea</strong></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Nausea</strong></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Falls</strong></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Pressure Ulcer</strong></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
Mapping Process

- Conceptual and semantic equivalency

- Consensus meeting
  - Review and validate expert mapping

- Draft report
  - Review and validation

- Final report – *Mapping Canadian Clinical Outcomes in ICNP®*
C-HOBIC Mapping

- 58 HOBIC concepts were matched and validated as C-HOBIC terms at the forum
- 13 HOBIC concepts were partially mapped and required a new term for completion as C-HOBIC terms
- 24 new C-HOBIC terms were proposed for inclusion in ICNP
- 1 HOBIC concept (“Activity did not occur”) could not be mapped to ICNP.
- Two HOBIC ordinal scales were retained for use in C-HOBIC, including the pain scale and the number of falls.
- Total: ninety-six (96) terms were addressed in this project.
# Functional Status Terms for Acute Care

<table>
<thead>
<tr>
<th>C-HOBIC</th>
<th>ICNP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent</td>
<td>Positive Ability</td>
</tr>
<tr>
<td>Set up help Only</td>
<td>Negative Ability</td>
</tr>
<tr>
<td>Supervision</td>
<td>Negative Ability</td>
</tr>
<tr>
<td>Limited Assistance</td>
<td>Negative Ability</td>
</tr>
<tr>
<td>Extensive Assistance</td>
<td>Negative Ability</td>
</tr>
<tr>
<td>Maximal Assistance</td>
<td>Negative Ability</td>
</tr>
<tr>
<td>Total Dependence</td>
<td>Negative Ability</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C-HOBIC</th>
<th>ICNP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bathing</td>
<td>Positive Ability to Bath = 10028224</td>
</tr>
<tr>
<td></td>
<td>10028224 + 0</td>
</tr>
<tr>
<td></td>
<td>Impaired Ability to Bath = 10000956</td>
</tr>
<tr>
<td></td>
<td>10000956 + 1, 2, 3, 4, 5, or 6</td>
</tr>
<tr>
<td>Personal hygiene</td>
<td>Positive Ability to Perform Self Hygiene = 10028708</td>
</tr>
<tr>
<td></td>
<td>Impaired Ability to Perform Self Hygiene = 10000987</td>
</tr>
<tr>
<td>Walking</td>
<td>Positive Ability To Walk = 10028333</td>
</tr>
<tr>
<td></td>
<td>10028333 + 0</td>
</tr>
<tr>
<td></td>
<td>Impaired Ability to Walk = 10001046</td>
</tr>
<tr>
<td></td>
<td>10001046 + 1, 2, 3, 4, 5, or 6</td>
</tr>
<tr>
<td>Transfer toilet</td>
<td>Positive Ability to Transfer = 10028322</td>
</tr>
<tr>
<td></td>
<td>Impaired Ability to Transfer = 10001005</td>
</tr>
<tr>
<td>Toilet use</td>
<td>Positive Ability To Toilet Self = 10028314</td>
</tr>
<tr>
<td></td>
<td>Impaired Ability to Toilet Self = 10000994</td>
</tr>
</tbody>
</table>
# Readiness for Discharge Terms - Acute Care

<table>
<thead>
<tr>
<th>C-HOBIC</th>
<th>ICNP</th>
</tr>
</thead>
<tbody>
<tr>
<td>0. Not at all</td>
<td>Negative Ability</td>
</tr>
<tr>
<td>1. Limited ability</td>
<td>Negative Ability</td>
</tr>
<tr>
<td>2. Increased ability</td>
<td>Negative Ability</td>
</tr>
<tr>
<td>3. Moderate ability</td>
<td>Negative Ability</td>
</tr>
<tr>
<td>4. Consistent ability</td>
<td>Negative Ability</td>
</tr>
<tr>
<td>5. Very much so</td>
<td>Positive Ability</td>
</tr>
<tr>
<td>8. Activity did not occur</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C-HOBIC</th>
<th>ICNP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge of medications currently taking</td>
<td>Lack of Knowledge of Medication Regime = 10021941</td>
</tr>
<tr>
<td>5</td>
<td>Positive Knowledge of Medication Regime = 10023819</td>
</tr>
<tr>
<td>Understand purpose of the medication</td>
<td>Lack Of Knowledge Of Medication = 10025975</td>
</tr>
<tr>
<td>5</td>
<td>Positive Knowledge of Medication = 10025968</td>
</tr>
<tr>
<td>Ability to take medications as prescribed</td>
<td>Lack of Ability to Manage Medication Regime = 10022635</td>
</tr>
<tr>
<td>5</td>
<td>Positive Ability To Manage Medication Regime = 10029272</td>
</tr>
<tr>
<td>Recognition of changes in your body (symptoms) related to your illness</td>
<td>Lack Of Awareness of Symptoms = 10028479</td>
</tr>
<tr>
<td>5</td>
<td>Positive Awareness Of Symptoms = 10029467</td>
</tr>
</tbody>
</table>
Mapping C-HOBIC and SNOMED CT

• C-HOBIC data set (C-HOBIC/ICNP Catalogue Nursing Outcome Indicators) in SNOMED CT

• International delegation met in Montreal in advance of NI2012
  – Validated mapping strategy, initial mapping, and next steps

• Mapping currently completing mapping tables of concepts and validating through the IHTSDO Nursing SIG
INTERACTING WITH ICNP®
ICNP® Browser

http://www.icn.ch/ICNP-Browser-NEW.html

• 2013 and 2015 releases
• Multiple views
  – List
  – Hierarchy
  – Axis
Additional ICNP® Resources

• ICNP® website

• Download form

• ICNP® Bulletin
  – Sign up for this regular newsletter
Margie Kennedy, PhD, RN, CPHIMS-CA, Prosci, PMP, P2P
Chief Nursing Informatics Officer
Managing Partner, Clinical Informatics

E. mkennedy@gevityinc.com
M. 902-402-5682

© 2014 Gevity Consulting Inc. All Rights Reserved.
Any trademarks or service marks used are the property of their respective owners.

Version: 0.93 (2014-10-09)

Gevity Consulting Inc.
#350 - 375 Water Street
Vancouver BC V6B 5C6
Canada
APPENDICES
Definitions

• Concept
  – A single idea, action, or thing with a unique meaning

• Term
  – one or more words used to describe a concept or data element

• Code
  – An expression of a term or concept

• Coding
  – Processing or assigning a code to a specific concept; usually performed within a system or by health information personnel

• Classification (Classification system)
  – Ordered systems of concepts for a domain with explicit order principles; definition depends on expected use; both nomenclature and terminologies can be presented in classifications

• Nomenclature
  – Subset of terms for a given domain, including both terms and relationships; no hierarchical structure; usually presented by an official group that uses the terminology
Definitions cont’d

- **Synonyms**
  - Different terms that represent the same concept
    - MI & heart attack; pyrexia & febrile, knowledge deficit or lack of knowledge

- **Homonyms**
  - Different terms that are spelled and pronounced the same but have different meanings
    - Rose – a flowering shrub or the past tense of ‘rise’

- **Natural language**
  - Broad use of language to express concepts, may include native language or expressions

- **Controlled language**
  - Terminology & vocabularies
Vocabularies & Terminologies

**Vocabulary**
- A set of terms within a specific domain available for use to individuals or groups

**Controlled Vocabulary**
- A set of terms limited or constrained for use in a specific environment (e.g., PICU, orthopedics, neurology, etc)
  - Counterpart of natural language for systems, with restricted terms and grammar rules
  - Can provide a list of terms for users to select

**Output Vocabulary**
- Terminologies used for information analysis; system tools derive information from the reference terminology

**Terminology**
- The set of words or word groups with specific meaning in a domain

**Interface Terminology**
- A controlled vocabulary from which users can choose a term in a list to enter in a system; may include all lexical varieties, acronyms, abbreviations, all with their own context-dependent meaning

**Reference Terminology**
- Set of all terms or words to represent a specific domain
- Can consist of multiple interface terminologies
2015 ICNP® Release

- **Code** - the unique identifier for a concept, guaranteed across releases.
- **Knowledge name** - the identifier within the underlying ICNP terminology system- only unique within a release for active concepts.
- **Preferred term** - the natural language label for this concept.
- **Concept description** - further information on the concept (English).
- **Axis** - this refers to the axis of the ICNP, one of the 7 axes, or pre-coordinated Diagnosis/Outcome or Intervention.
- **Version** - release version when this concept introduced.
- **Axis key**:
  - DC - Diagnosis/Outcome
  - IC - Intervention
  - A – Action
  - C - Client
  - F - Focus
  - J - Judgment
  - L – Location
  - M – Means
  - T - Time
SNOMED CT

• **Systematized Nomenclature Of Medicine Clinical Terms**
• The most comprehensive multilingual clinical healthcare terminology
• Components
  – Concepts
  – Descriptions
  – Relationships
SNOMED CT Concepts

• A unique clinical meaning which is identified by a unique numeric identifier (ConceptID) that never changes.
  – no hierarchical or implicit meaning

• Each concept has one “fully specified name” that provides a unique unambiguous description for a concept.
  – It is not necessarily the most commonly used description of a concept and is more likely to be used for formal documentation such as research papers.
  – Eg., myocardial infarction rather than heart attack

Source: NHS
SNOMED CT Descriptions

• Three most common descriptions:
  – **Fully Specified Name** – totally unambiguous way to name a concept, e.g. Myocardial Infarction (disorder).
  – **Preferred Term** – most common word or phrase used by clinicians to name a concept, e.g. Myocardial Infarction.
  – **Synonyms** – descriptions that have the same meaning as the Fully Specified Name but different representations, e.g. Heart Attack, Infarction of Heart, MI

Source: NHS
SNOMED CT Relationships

• Every concept in a hierarchy is related to other SNOMED CT concepts. Individual concepts may be in more than one hierarchy.

• Define a concept where it can be expressed in terms of other concepts
  – (e.g. myocardial infarction IS A injury of anatomical site).

• Enables grouping of closely related concepts and machine logical reasoning about the information in SNOMED CT.
  – Designed to enable aggregation of clinical information for secondary purposes without any loss of the detail required for primary clinical use.

• Also allows concepts to be further qualified by combination with other concepts such as “myocardial infarction” being further qualified with a severity (e.g. fatal).

Source: NHS